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Medicine

Progress in Cardiovascular Disease

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In the past year the advances in the field of cardiovascular medicine have proceeded with the pace which characterized the world-wide surge in research and the revolution in surgical treatment of the past decade. A discussion of the many highly specialized investigations and changing concepts in all subdivisions is beyond the scope of this article. An attempt has been made to outline some of the methods and theories in current use.

The combined effort of the catheterization team and the radiology service is probing many previously inaccessible intracardiac puzzles. Cardiac ventriculography using direct transthoracic needle puncture of either right or left ventricle is being used to demonstrate and evaluate aortic valve disease, atrioventricular valvular insufficiencies, ventricular aneurysms, inter-ventricular septal defects, and certain thoracic aorta lesions. Considerable hazard attends this procedure, which should be performed by a specialized team¹. The left ventricle may be catheterized by retrograde approach via needle puncture of the subclavian, or through an exposed radial artery².

Cineradiography has been slowly advancing over the past fifty years, and in the past two years the improvement in fluoroscopic image intensification, and larger field coverage in newer tube designs, has facilitated the incorporation of moving picture technique into cardiac fluoroscopy and angiography. It is now possible to combine catheterization and cinecardioangiography in one procedure, yielding maximum information, a moving picture record, and low radiation exposure. This is particularly useful in analyzing cardiac malformation, but is applicable to the study of acquired heart disease³.

In addition to improved phonocardiographic techniques, a new auscultatory approach has evolved from cardiac catheterization — intracardiac phonocardiography. Using miniature sound receptors, similar to U.S. Navy underwater submarine sound detection apparatus, investigators are studying the production of heart sounds as registered at the catheter tip. Still in its infancy, this will supplement external auscultation, and clarify the mechanism of production of murmurs⁴.

Current attempts at surgical correction of obstructive and constrictive lesions of the coronary artery tree have promoted intensive studies of

coronary radiography, but many problems remain to be solved. Attempts to opacify coronary arteries by media introduced into the proximal aorta (by catheter or suprasternal aorta puncture) or via left ventricular puncture, are not yet safe or reliable, nor are the results uniformly accurate. A more satisfactory technique is to be anticipated.

In diagnosis of hypertension secondary to renal dysfunction, angiographic techniques are demonstrating hitherto unsuspected cases of unilateral renal artery insufficiency. These may be structural abnormalities or degenerative changes of atheroma and aneurysm.

Indicator dilution curves may be made a part of cardiac catheterization study. A dilution curve depicts transit times from injection site to sampling site, for calculation of the volume rate of flow through the circulatory system, volume of the system, speed of circulation time and the presence or absence of abnormal pathways. The indicators used may be dyes or radioactive solutions or gases. These dilution curves serve to localize and quantitate intracardiac shunts, cardiac output, regurgitant blood flow, and chamber volumes.

The measurement of the enzymes Serum Glutamic Oxalacetic Transaminase (SGOT) and Serum Lactic Dehydrogenase (LDH) have proven worthwhile aids in diagnosis of acute myocardial infarction, when appraised in conjunction with other clinical and laboratory evidence. SGOT elevation depends on release of the enzyme from muscle, and assists differentiation of myocardial infarction from angina and coronary insufficiency in which myocardial necrosis is absent. SGOT has peak activity 12 - 36 hours, lasting 2 to 5 days after acute infarction, while LDH may persist 6 to 10 days. Serial determinations are necessary. These tests give a rough correlation with severity of attack and prognosis, and are not specific for myocardial damage, but may show increased activity in damage to other viscera and muscle, and are affected by many drugs and some anticoagulants. Serum Glutamic Pyruvic Transaminase (SGPT) rises little with infarction, but usually exceeds SGOT or LDH in hepatocellular disease⁵.

Rheumatic fever prevention programs have been in effect for up to 20 years, and reports confirm a definite decrease in rheumatic fever, using penicillin and sulfonamides in eradication of the initial streptococcus infections, and for prophylaxis against recurrence. The complete lack of resistance of Group A streptococci to penicillin makes this the drug of choice. It is important that streptococci be

completely eradicated in the initial infection by adequate chemotherapy, as infection may persist during rheumatic activity and be responsible for long continuing bouts. The Department of Health of Manitoba provides free oral penicillin for individuals with a history of rheumatic fever or rheumatic heart disease, upon satisfactory recommendation by the attending physician. The treatment of acute rheumatic fever remains at penicillin, salicylates or adrenocortical steroids^{7, 8, 9}.

The many excellent surveys of factors in the etiology of arteriosclerotic cardiovascular disease have not yet determined the relative importance of environmental factors, stress, physical exercise, tobacco, climate, hormones and nutrition. Older dietary concepts recommending in turn the restriction of total calories, cholesterol, total fat, animal fat, have been replaced by programs condemning only saturated fats¹⁰. Feeding of saturated fats raises serum cholesterol and unsaturated fats lower it, but this is not uniformly effective. Some studies emphasize the beneficial effect of "essential" fatty acids, and claim they serve to offset harmful effects of saturated fats and to lower serum cholesterol. It is generally agreed that estimation of serum cholesterol is the single, most satisfactory test for assessing a patient's lipid status, and that populations and individuals with elevated serum cholesterol are victims of, or potential candidates for atherosclerotic cardiovascular disease¹¹. It has not been proven that a high circulating level of cholesterol is a cause *per se* of atherosclerosis; both atherosclerosis and high blood lipids may be secondary results of some primary fundamental derangement as yet not elucidated. Irrespective of their role in atherosclerosis the dietary phospholipids now are implicated in the problem of blood coagulability.

Attempts to determine the actual mechanism of intravascular clotting have still to elucidate the nature of the inhibitor-activator system which keeps blood fluid, the secret of what initiates thrombus formation, the possibility of bound heparin in the blood, the factor of changing platelet "stickiness," the role of phospholipids in cell permeability and surface phenomena. The thromboplastic property of blood platelets is related to the phospholipid content. Hyperlipemia in general leads to acceleration of blood clotting and to inhibition of blood fibrinolysis¹². Coagulability of blood has been found greater in patients with ischemic heart disease, as measured by platelet stickiness, fibrinogen, thromboplastin generation and prothrombin time¹³. Suspensions prepared from atherosclerotic vessel walls compared with those from normal vessels demonstrate a definite thromboplastic activity. Newer recommendations for dietary management may be forthcoming when more is known of the role of phospholipid chemistry in the phenomena of intravascular thrombosis and thrombolysis.

In everyday practice, measures to lower serum cholesterol chiefly consist of weight reduction, restriction of total calories, and restriction of animal fats. The feeding of special emulsions of unsaturated fatty acids has proven expensive and unpopular with patients. The administration of oral nicotinic acid in large doses (1.5 to 6 grams daily), has been shown to lower serum cholesterol and lipids, and has produced no liver damage in patients followed up to 3 years. The subjective side effects can usually be overcome by adjustment of dosage, or they diminish as tolerance increases. This treatment is simple and economical, and seems effective even when no dietary restrictions are enforced¹⁴.

The advent of chlorothiazide as a diuretic and hypotensive has been succeeded by introduction of hydrochlorothiazide, flumethiazide, and hydroflumethiazide. Sodium excretion is approximately equal in each at recommended dosage. Chloride excretion is less than sodium with chlorothiazide and flumethiazide but exceeds sodium excretion with the hydro derivatives. Potassium depletion may occur with any of these drugs but does not rise proportionately with higher dosage.

Anticoagulant therapy is well established treatment for impending or acute myocardial infarction. Now, the argument continues regarding the benefit of long-term anticoagulants in patients with ischemic heart disease. Convincing favorable reports show prolonged survival, reduction of thromboembolic episodes, and less frequent subsequent myocardial infarctions in groups so treated^{15, 16}. Hemorrhage has not been a high risk. Further years of follow-up and statistical analysis are needed for evaluation, and to determine how long anticoagulants must be continued for optimum protection.

Controversy continues regarding the beneficial effect of bilateral internal mammary artery ligation in ischemic heart disease. Cases followed up to four years show clinical improvement in as high as 90%, but there is no proof of increased myocardial blood flow¹⁷. In the past, various surgical procedures have been designed to augment myocardial blood supply, or to graft new sources of blood supply onto the myocardium via transplanted vessels or production of intrapericardial adhesions. The high mortality rates and unreliable outcome have been disappointing in human subjects. Newer trends are to direct surgical attack and endarterectomy on localized occlusions in coronary arteries. This has become possible since the availability of "heart-lung" apparatus, but it awaits the development of satisfactory coronary artery radiography.

Recent reports of anticoagulant therapy in cerebrovascular disease have revived interest in the recognition and differentiation of syndromes of cerebral and basilar artery insufficiency and

occlusion^{18, 19, 20, 21}. Partial obstruction by atheroma in the carotid arteries may be manifested by a bruit. Murmurs produced in the common or external carotid are commonly heard at the carotid bulb; those from the internal carotid at the angle of the jaw or over the ipsilateral eyeball²². Anticoagulants may abolish transient episodes due to arterial insufficiency, may prevent strokes, and decrease recurrences. They appear to be beneficial in the early stages of strokes and emboli. Hemorrhage is an ever-present danger, particularly in hypertensive patients, and there is no established rule about the length of long-term anticoagulation. Some investigators estimate that up to 30% of occlusive lesions of cerebral arteries are extracranial in location, and amenable to surgery by endarterectomy or by-pass graft²³.

Oscillometry, digital plethysmography, skin temperature tests, auscultation and walking tests remain the important methods in the study of peripheral vessels. Angiography and aortography carry some risk but it is necessary to visualize the arterial tree in patients for whom surgical reconstruction is contemplated²⁴. Management of arterial occlusive disease is mainly conservative, employing vasodilator drugs, diet, exercises and anticoagulants. Direct surgical relief of localized lesions by embolectomy or endarterectomy is increasing with wider use of angiography, but cannot replace anticoagulants for treatment of widespread disease or obstructions of small vessels. Encouraging reports show that fibrinolysin (plasmin) is of benefit in acute thromboembolic disease of the extremities. Combined with anticoagulants, fibrinolysin appears to hasten recovery in acute deep thrombophlebitis, and may reduce recurrences and pulmonary emboli²⁵.

Reports are now appearing of late failure in arterial homografts due to atherosclerotic changes and aneurysmal dilatation. Synthetic prostheses in vascular surgery have included nylon, polyvinyl, orlon and now the trend is to dacron and teflon. The ideal material has not yet been found. It is possible that synthetic grafts may develop less arteriosclerosis in the pseudointima, as compared to the intimal degeneration occurring in homografts.

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Surgery

Advances in Thoracic Surgery

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Surgery of the Aortic Valve

The repair of lesions of the aortic valve remains a challenge. The technical problems involved in approaching a deeply located valve in close proximity to the coronary ostia are considerable. The nature of the pathological process affecting the valve would almost appear to preclude a definitive repair in many instances. Unlike the surgery of pulmonic stenosis, aortic valvotomy necessitates an approach through the left ventricle or aorta with the risk of systemic embolization, massive hemorrhage, and interference with the coronary circulation. In the event of an incomplete repair, the patient is left to face a post-operative period with a residual gradient or with the added burden of aortic insufficiency. A few individuals have had the courage to undertake the surgical correction of aortic lesions, and they have contributed greatly to the advancement of cardiovascular surgery.

Acquired lesions of the aortic valve are the result of degenerative and inflammatory processes, rheumatic fever, sub-acute bacterial endocarditis and syphilis, which leave behind them a stenotic or an incompetent valve or a valve both stenotic and incompetent. Left ventricular failure and impaired coronary, cerebral and systemic circulation ultimately ensue. Recurrent infection of the damaged valve with the development of bacterial endocarditis creates an additional hazard for the patient. Despite medical therapy, the onset of left ventricular failure due to aortic stenosis, heralds death by only a few years.

The surgical problem is the approach to the diseased valve and the correction of pathology without further embarrassment of the left ventricle by the creation of aortic insufficiency or by residual pressure gradients across the valve. The technical problems involved in this endeavor have been immense.

Tuffier¹ in 1913 is credited with the first attempt at the surgical relief of aortic stenosis by digital dilatation of the stenotic aortic valve through an intact aortic wall. Brock² in 1946 conceived the first visual repair of aortic stenosis employing an operating cardioscope introduced via the right subclavian artery down to the aortic valve. He anticipated inspection of the valve and its division by means of an operating knife incorporated into the cardioscope. He examined his first patient with aortic stenosis in 1947 and visualized the lesion, but because of vegetations encountered considered the lesion unresectable. In November, 1955, Swan³ completed his first direct vision procedure upon a

stenotic aorta valve, employing external hypothermia and inflow stasis. Shortly thereafter he reported upon the surgical treatment of 11 cases of congenital aortic stenosis, 3 subvalvular and 8 valvular, with 3 surgical deaths. Five of these eleven patients developed aortic insufficiency following the procedure.

Since Brock's original attempt at the visual repair of aortic stenosis, the approaches to the aortic valve have been either via the transventricular or transaortic routes, the latter, employing either a closed method utilizing an operating tunnel (Bailey⁴, Swann⁵ sutured to the aortic wall, or open, employing hypothermia (Lewis, Swann⁶) or cardiopulmonary bypass. (Lillehei and Varco⁷, Clowes⁸ and Kirklin⁹ Hypothermic techniques permitted visualization of the stenotic valve via the transaortic route. However, the time limitations imposed by inflow stasis allowed only for rapid visualization of the stenosing mechanism and mobilization of the rigid cusps through incisions in the commissure area. The nature of the stenosis, with the rigid calcified, deformed valve cusps, combined with the time limitation, led in many instances to residual aortic gradients or to the creation of aortic insufficiency. The difficulties in resuscitating a cold anoxic left ventricle at the conclusion of the valvotomy were considerable. Mortality rates were often in excess of 30% and the results not always as desired.

Disappointment with what could be accomplished by the direct visual approach within the time limits provided by hypothermia, led to the abandonment of this technique by some surgeons and a return to the transventricular approach advocated by Brock, Bailey, Glover, Merendino and Mueller whose results employing this technique were in no way inferior to the transaortic approach despite the employment of an essentially blind technique for valvotomy. Glover¹⁰ in 1958 reported on 78 cases of aortic stenosis employing transventricular aortic commissurotomy. The mortality rate for the last 41 patients being approximately 5% with a reduction in the gradient across the aortic valve from a preoperative average of 78 mms. Hg. to a postoperative average of 27 mms. Hg. Harken¹¹ in the same year reported on 100 consecutive cases of calcified aortic stenosis operated upon by the transaortic route employing an ivalon tunnel with 16 operative deaths, 12 late deaths and 72 survivors, 85% of whom were benefitted by the procedure.

Further impetus to the repair of the aortic valvular disease was provided by Lillehei at the University of Minnesota in 1956 when he described his technique for the direct vision correction of

calcified aortic stenosis by means of a pump oxygenator combined with retrograde coronary sinus perfusion to prevent anoxic arrest and ventricular fibrillation. In 1958, the direct repair of aortic stenosis and insufficiency was undertaken by Kirklin employing total cardiopulmonary bypass, anoxic cardiac arrest and intermittent coronary artery perfusion. This technique permitted the surgeon to carry out a deliberate systematic attack upon a diseased valve in a bloodless field, under direct vision. Sufficient time was available for the removal of vegetations and calcified deposits and for the reconstruction of cusps and commissures. The results to date have been encouraging and the technique promises to supercede previous techniques of valvotomy and valvuloplasty.

The correction of aortic insufficiency has been even more difficult with the constant hope of discovery of a substitute valve to replace the diseased one. In 1951 Hufnagel¹² described his aortic plastic valvular prosthesis, inserted into the descending thoracic aorta to reduce by as much as 75%, the excessive work demanded from the left ventricle by an incompetent aortic valve. Like therapy for aortic stenosis, the Hufnagel valve, although a significant contribution in the management of aortic insufficiency, was not uniformly satisfactory. In 21 cases operated upon by Conklin¹³ employing the Hufnagel valve, there were 5 hospital deaths including 3 due to ventricular fibrillation developing during surgery, and 4 late deaths attributed to the insertion and malfunction of the valve itself. In 1958 Garamella¹⁴ introduced his technique of open plastic revision of an incompetent tricuspid aortic valve by excision of a segment of the ascending

aorta bearing the non coronary cusp. Attempts at replacement of the aortic valve proper by a synthetic substitute have to date been unsatisfactory.

Surgery of the aortic valve has been advancing rapidly in the past decade. The desire for complete accurate repairs is leading to new and improved surgical techniques which promise better results at a reduced risk to the patient.

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Survey of Pediatric General Surgery

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The concept that "the adult may be safely treated as a child, but the converse can lead to disaster," is relatively new. It is just thirty-five years since Ladd began to demonstrate that some conditions in the new-born, which had been regarded as fatal, could be successfully treated.

It is the purpose here to review some of the newer concepts in the management of pediatric surgical problems, disregarding at present the advances in cardiac and chest surgery which are beginning to fall more within the province of those surgeons who confine their work to cardio-vascular and thoracic surgery.

Attention has been directed in the literature to the compilation of unusual anomalies, discussion of different forms of management and the accumulation of surgical experience in these little people. Old surgical techniques applicable to adults have been modified to suit the special needs of pediatric patients. What has been lacking to date are published reports from which younger surgeons may

learn. This gap is being narrowed by an increasing flow of papers on surgical problems and the publication of Swenson's recent book on "Pediatric Surgery¹." That methods of management are not stereotyped is evidenced by the lively discussion of such commonplace subjects as the management of inguinal herniae in children, management of appendicular abscess, or the timing for surgical replacement of an undescended or ectopic testicle in the anatomically correct position.

Burns

The rapidity with which children move and their natural curiosity make thermal or liquid burns one of the commoner conditions seen in a Children's Hospital Outpatient Department. In general, the management of burns in children parallels that of adults with some small but important variations. Infants have a larger surface area per unit of weight than adults and electrolyte imbalance and dehydration with profound clinical manifestations occur rapidly. Formulae, if used in the calculations of fluid requirements in burned children, must not be adhered to too rigidly, and are subject to hourly

change depending on the response of the child to therapy.

Minor burns of ten to fifteen percent, readily tolerated by an adult, must be observed carefully, and children should be admitted to hospital where fluid intake and output may be more carefully controlled and observed. Oliguria and shutdown has followed upon this minor trauma.

Farmer has recently reviewed their large series of burns treated at the Hospital for Sick Children in Toronto. Cases treated in their burn unit divided naturally into cases prior to 1941 and those subsequent to 1945. In spite of more efficient management and increased knowledge of fluid replacement in immediate resuscitation, the mortality rate in the first group was 8.4% and in the second, 8.6%. Great improvement has been effected however, in the morbidity of burned children.

Controversy is still apparent in the types of fluids to be used in recovering the child from burn shock. Various writers advocate blood, some adhere to plasma as a more efficient replacement fluid for colloid in the initial treatment². The efficiency of resuscitation has been increased and improved by the more common usage of Moyer's solution orally. Ringer's lactate and serum albumin, administered intravenously, have played their part in this improvement.

Earlier grafting, the use of intravenous fat solutions and the administration of androgenic substances have contributed to the correction of catabolic states following extensive third degree burns.

General Abdominal Surgery

Surgeons in some areas are devoting their full attention to surgery of infants and children. This is leading to an ever increasing accumulation of experience and, as a consequence, more authoritative reports in the literature.

On the American Continent the management of hypertrophic pyloric stenosis is almost exclusively surgical. Studies on the tumors of patients who have died, have, in some instances, shown an absence or decrease in the number of ganglion cells present. This has been postulated as an etiology³ but is not generally accepted. It is also recognized that remedial surgery on this condition is never an emergency, and the child is better served by a period of time devoted to pre-operative correction of alkalosis and hypokalemia. In some cases, in severely ill children, I have delayed as long as four days before being satisfied that the infant could tolerate the operation safely.

The surgical approach to, and reduction of herniation through congenital diaphragmatic defects is much under discussion in this age group as it is in adults. The frequency of malrotation or non-fixation of large bowel and other anomalies makes easy access to the abdominal contents mandatory. Bingham⁴ recently has advocated a thoraco-abdominal approach to these hernias and

performance of a Ladd operation in every instance. On very rare occasions difficulty is experienced in placing the displaced organs into a small abdominal cavity. The exposure in a solely abdominal approach is excellent because of the wide flaring costal margin and this incision offers an alternative method of closure of the wound, if the mass of viscera is too great for the size of the coelomic cavity. For these reasons many surgeons still regard a left rectus or transverse incision ideal.

Gross has advocated the Mikulicz enterostomy as a procedure of choice following resection of intestinal atresia. There is a growing tendency, with improvement of pre-operative preparation, and post-surgical care, to perform resection and end-to-end anastomosis to attempt to avoid the biochemical and mechanical complications of the Mikulicz procedure. The increasing awareness of the "blind-loop" syndrome and its consequences in growing children makes "by-pass" of an atretic area a procedure of second choice. Several instances have been observed where anatomically patent anastomoses failed to function. Microscopic examination of the proximal gut at the anastomotic site revealed, in some instances, absent ganglion cells and in others, decreased numbers of these cells. It would seem wise, when resecting an atretic area of small bowel, to include eight to ten centimeters of proximal dilated bowel in the specimen.

The initial treatment of ileo-colic intussusception is now generally accepted as a reduction by barium enema. There does not appear to be any relationship between the duration of symptoms of the lesion and the ability to reduce it by this method, which is successful in seventy to eighty percent of attempts. Several instances of perforation of bowel by this procedure have been reported and every time adequate controls were not placed on the amount of hydrostatic pressure (3 feet) used⁵. One case only is reported of reduction of gangrenous bowel, but fortunately this was recognized and operated with a successful conclusion.

Barium enema is a shocking procedure to small children, and occasionally enema for reduction should be delayed until the child has been prepared, as one would prepare a severely ill infant for operation. This may require cut-down with the administration of blood and electrolytes prior to undertaking the examination.

Long segment Hirschsprung's disease with agenesis of the myenteric plexus throughout the whole colon and extending into terminal ileum on occasion is being reported more frequently⁶. The new-borns present with a bowel obstruction and even at operation it is difficult to make a diagnosis. At first glance the diagnosis would appear to be meconium ileus with the inspissated meconium causing an obstruction in the distal ileum. The microcolon is often considered as a normal colon which has not been dilated by stool. Enterostomy with removal of meconium will fail to relieve the

obstruction. Under these circumstances, Mikulicz enterostomy with colon biopsy is the only recourse. Unfortunately, the diagnosis of cystic fibrosis of the pancreas cannot be confirmed until the child is at least three months old. It could be diagnosed it would make the initial problem much easier. If the biopsy reveals that no ganglion cells are present in the colon then of course the ileostomy must be left, if not, the Mikulicz enterostomy can be closed in four to five days.

The treatment of classical Hirschsprung's disease with the aganglionic rectum and rectosigmoid is becoming more clear. The following general rules may be used as a guide. (a) New-born infants and babies under twelve months are best treated by preliminary colostomy, and resection postponed until the weight of the child is thirty to thirty-five pounds. (b) Older children and adults in poor general condition, or who suffer an acute colonic obstruction, are most safely managed with a preliminary colostomy until their physical condition improves, after which "pull-through" with resection of all the aganglionic area should be performed.

Prior to operation genito-urinary investigation with cystometrograms should be undertaken. About fifty percent of patients have an atonic bladder with low intravesical pressure. The association of megoloureters with Hirschsprung's disease of the colon is also well-known.

In the long term follow-ups of patients treated surgically for Hirschsprung's, impotence does not appear to be a complication.

For many years an ideal irrigating fluid has been sought for the removal of inspissated meconium from within the bowel. Olim reported on the use of Hydrogen Peroxide for irrigations and it has been found to be most effective in separating the viscous ileal contents from the bowel wall⁷.

Recent Trends in the Treatment of Burns

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The treatment of severe burns still presents many problems. Different methods are recommended both for the general and for the local treatment. One may assume, therefore, that the best form of treatment has not been devised yet.

In reviewing the response to a severe burn, it is convenient to separate the general response to injury from the specific effects of the burn. In the unspecific reaction to stress, the increased production of adrenal cortical hormones needs to be emphasized. It leads to conservation of water and sodium and to an increased loss of potassium in the urine.

Paper presented at the Annual Meeting of the Manitoba Medical Association in Winnipeg, Manitoba, October 6th, 1959.

Malignant Tumors

The principles applicable to the management of malignancy in adults are equally applicable to children. The dangers of radiating infants for treatment of benign disease are becoming better recognized⁸.

Martin Bodian has recently given a progress report on the effect of massive doses of Vitamin B12 on neuroblastoma⁹. It is used as an adjunct to surgical, and/or radiotherapy. He reports that "no child with a clinical onset of disease in the first year of life has failed to respond favorably . . .". Too few treated cases are available for significant statistical analysis, but it would appear that the vitamin enhances a biological tendency of the tumor to mature and regress.

The newer work on leukemias, of treatment by total body irradiation and subsequent marrow transplant has not yet been shown to have any clinical application. This is a promising field of endeavor but unfortunately still belongs in the laboratory.

Summary

Some recent advances in the field of pediatric surgery have been discussed briefly.

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In each type of injury, the general response is modified according to characteristics of the factors causing the injury. Following a thermal burn, the body forms an extensive inflammatory exudate, accompanied and preceded by capillary dilatation and an increase in capillary permeability. The exudate contains protein in a lower concentration than plasma. Consequently, there is a short first period in which the concentration of plasma proteins is increased because comparatively more water than protein has been transferred from the plasma to the inflammatory exudate. Later, interstitial water is attracted into the plasma and at the same time more water, electrolytes and protein are lost into the exudate. Severe dehydration sets in soon.

Part of the exudate is lost on dressings or otherwise, another part accumulates in the burn area and causes swelling. Usually, the fluid accumulated in the swelling increases for the first 24 hours or

more following the burn and although "sequestered," this fluid and its components are in equilibrium with the rest of the body and part of the fluid given to the patient therapeutically will soon end up in the exudate. The formation of the exudate has been further investigated by Sevitt in Birmingham¹. By coloring the plasma proteins with a dye, such as Evans blue, at varying time intervals following experimental burns of varying intensity, he found that there is an early and a late phase of edema production. He postulated that early edema is due to a direct damaging effect on the capillaries, whereas, the late phase is mediated by some humoral agent. In the past, a number of chemical agents have been mentioned as possible causes of the edema in burns, for instance, histamine and leucotaxine. Evidently, if such a compound could be found, it might be of clinical importance.

The decreased circulating blood volume leads to vaso-constriction and consequently, the blood pressure at first does not fall.

At the time of thermal injury, destruction of erythrocytes of a varying magnitude takes place. Free hemoglobin appears in the plasma and consequently in the urine. At the same time erythrocytes are trapped in the dilated capillaries in the burned area. Due to these two factors, a considerable decrease of the circulating red cell mass may occur.

These considerations are important in the evaluation of the hematocrit determinations which are customarily done on burned patients. The hematocrit expresses the relation of red cell mass to the quantity of plasma. If more plasma than red cells are lost, the hematocrit will rise. If both change at the same rate, the hematocrit does not change and, if relatively more red cells are destroyed, it will fall.

Immediately, following the burn then, there is considerable loss of water, electrolytes, proteins and erythrocytes, and the circulating blood volume is decreased and there is vaso-constriction in the whole organism except in the traumatized area. The stage is set for the development of shock. Burn shock is the first phase following a severe burn, requiring immediate attention. It is impossible to cover the shock problem here; some aspects have been pointed out, and other particularly interesting aspects of shock and renal failure treated with blocking agents, will be discussed by Dr. Thomson².

The second phase, the postburn phase, starts when the patient is over the shock phase. Adequate nutrition and the control of sepsis are the important points. The third phase, rehabilitation will not be included in this discussion. Each phase will be reviewed separately in the following paragraphs.

The treatment of the shock phase should start as early as possible. There is not much one can do as First Aid, although the proper immediate treatment is very important. Pain should be relieved

by giving morphine, and the burned area is left alone. It is covered with a clean sheet in order to avoid contamination and the patient is sent to the hospital right away. Useful time may be lost during the transport and in an extensive burn, establishment of an intravenous drip of saline or plasma expander before the trip has to be considered.

On arrival at the hospital, the patient is assessed quickly. The extent of the burn is estimated, the "rule of nine" introduced by Wallace³ probably being the best rule of thumb. An attempt should be made to determine the depth of the burn. Dupuytren who first classified the burns according to depth differentiated seven degrees. From a practical standpoint, it is only important to differentiate between full thickness skin destruction and partial thickness skin destruction. A blood sample should be taken at this time for determination of hemoglobin and hematocrit. Since superficial veins are scarce and important, the same needle is used for the intravenous drip. A catheter is introduced into the urinary bladder and the urine is collected and measured at hourly intervals.

More important than laboratory investigations is the clinical appraisal of the patient. He already may be unconscious and in shock. Impending shock may be diagnosed in the presence of cold, clammy extremities, a thready fast pulse, collapsed veins. It is common knowledge that at this stage, the general treatment takes precedence over the local treatment. If any of these symptoms are present, do not waste time waiting for the laboratory technician or even to take the blood pressure, start an intravenous drip right away, if necessary by a cut-down. Antibiotics and tetanus prophylaxis are given. Now the attention will be focused on the burned area and a decision will be made regarding the type of local treatment. Contamination has to be avoided. Last, but not least, there are some psychosomatic aspects. The patient is in pain and apprehensive. He needs analgesics and reassurance.

The treatment of burn-shock is not different from the treatment of shock due to fluid loss in general. The statement, "Replace what is lost" again is an over-simplification, but it outlines the principle. The circulating blood volume is too small for the vascular bed, and therefore, the circulation is inadequate. It is common knowledge that the burned patient needs fluids—but which kind of fluid and how much? Evans' formula⁴ (table 1) and its modifications have been used for a long time, and, in spite of some objections which have been raised, it is a useful guide.

All such formulas have one great inherent danger: They make things too easy. Such formulas apply to the "average patient." We are never treating an average patient, but a burned human being whose reactions may be quite different. The estimations of the burned area and of the weight, may be erroneous. Obviously, the regime will have to be adjusted to the individual requirements, but,

Table 1
Estimation of Fluid Requirements
According to Evans

1. Volume:

a) 1 cc. colloid solution	} x % burn x weight	in Kg.
1 cc. electrolyte solution		

 b) Basic requirements (2000 c.c.) as glucose in water.
2. Time:

Give above in first 24 hours, $\frac{1}{2}$ during first 8 hours.
3. Burns of more than 50% are treated as 50%.
4. Second day: requirements are approximately $\frac{1}{2}$ of above — must be adjusted to individual needs.
5. After 2nd day: part of edema may be absorbed, danger of overloading.

Unfortunately, there is no easy way to determine the individual requirements. The blood pressure is unreliable and may be unobtainable. The value of the hematocrit is questionable as mentioned previously. The best guide available is the hourly urinary output, but again there are a few things to be remembered. During and after an I.V. infusion of serum-albumin or dextran, there may be a considerable urinary output in the presence of dehydration. It must be remembered too, that during the normal post-traumatic phase, the urine volume is low, with a high concentration of potassium and a low concentration of sodium, presumably due to the production of Aldosterone. Consequently, if we push fluids to the point of so-called normal urinary output, we are overhydrating the patient. For an adult patient, an hourly urine output between 25 and 50 c.c.'s is recommended.

The colloid fluids in use today are blood, plasma and dextran and each one has its advocates. Most burned patients do not need blood during the shock phase. In view of the inherent dangers of plasma infusions, dextran appears to be the solution of choice. The effectiveness of Dextran depends to some extent on the molecular size of the preparation. Larger molecules remain in the circulation for a longer period of time than smaller molecules. British Dextran has a larger average molecular size than the American Dextran and may therefore, be preferable.

There is considerable controversy regarding the use of saline in the treatment of shock. Wilkinson⁵ does not give saline at all, because in his opinion it is not needed and only contributes to local edema which in turn favors infection. On the other hand, Markley^{6,7} and others have treated burn shock with saline alone.

Markley's work deserves to be discussed in some detail. They reported on the experiences made in a study in Lima, Peru. One hundred and fifty-three adults were treated during the first 2 days, either by saline only or by a colloidal solution plus dextrose in water. There were no deaths in the

"saline group" during the first 2 days, whereas, in the other group the mortality was 12%. 165 children were treated by either saline only or a combination of saline and plasma. Here, the early mortality in the "saline group" was higher than in the "saline and plasma" group, 19% as compared with 9%.

In the adults the total mortality was the same in both groups, 38% and 41%. In the children the total mortality in the "saline group" was 58% as compared to 40% in the "saline plus plasma" group. The interpretation of these results is somewhat difficult, but it would appear that saline therapy is a good emergency treatment in the adult burn patient. If possible, saline was given orally both in children and adults. This report is an important contribution especially in regard to the treatment of mass casualties when the more elaborate procedures can not be carried out.

The importance of discontinuing the intravenous administration of electrolytes as early as possible is stressed by all authors. The oral administration of a solution containing sodium bicarbonate is preferable to pure saline. Haldane solution containing a teaspoon of salt and a teaspoon of sodium bicarbonate per quart of water is easy to prepare⁸. As soon as possible, the patient should receive clear fluids and then proceed to a high protein diet.

About 10 years ago A.C.T.H. and Cortisone were introduced into the treatment of burns with great fanfares. A short time later they were quietly removed from the scene⁹. There is some evidence, however, that cortisone may be beneficial in certain types of shock.

Hypothermia as an adjunct to burn shock treatment has been used experimentally, but did not produce striking effects¹⁰.

Shortly, after admission, a decision regarding the local treatment must be made — open method or closed method. Again, each method has its advocates and the decision depends on the experience of the surgeon, the location of the burn and the facilities available. The main objects of the local treatment are prevention of infection and avoidance of damage to the delicate islands of skin and granulation tissue. Occlusive pressure dressings by using plaster were said to prevent excessive exudation. They are dangerous however, and at present moderate pressure, for instance, with elastic bandages, is recommended. In the exposure method, an attempt is made to obtain a dry crust or eschar. Its proponents thought that this produced an effective control of infection. Further investigations showed that it is not dependable¹¹. The exposure method usually should not be employed for more than 2-3 weeks⁸. Partial thickness burns have healed during that time and full thickness burns should be ready for grafting. In the presence of infection, the eschar should be removed and a dressing applied. The exposure of granulation tissue has to be avoided.

You are all familiar with the tanning methods, introduced in 1925 by Davidson in which the formation of an eschar is aided by the application of tannic acid and silver nitrate. It seems to be an unphysiological method and it was generally discarded when it was shown that the tannic acid produced liver damage. I was surprised to observe a few months ago, that the tanning method is still in use and apparently with success in some centres in Europe¹². Maybe it was discarded here too hastily.

After full-thickness skin destruction, early coverage with a skin graft should be attempted. A localized deep burn may be excised and grafted right away. Severely burned patients do not tolerate the operation and the grafting procedure has to be delayed. The dermatomes have been perfected mechanically during the past decade. Thin grafts of uniform thickness can be obtained and the same donor area can be used repeatedly if required. The electrical dermatome is said to be the best available, but I do not have any personal experience. The reports regarding the use of homografts are somewhat conflicting. The most enthusiastic supporters are McDowell and Brown in St. Louis¹³ who even went so far as to establish a skin bank using skin taken post-mortem. The donor skin at first "takes" in the same way as an autograft, but it is rejected after 3-4 weeks—except in identical twins—due to some immune mechanism.

In selected cases, this temporary coverage may be of value. When using homografts in girls, it should be remembered that the patient may form antibodies against the donor¹⁴. The use of skin homogenates appears to be under investigation.

In the post-burn phase, the nutrition may present a number of problems¹⁵. In spite of repeated transfusions, the hemoglobin concentration does not reach normal levels in the majority of cases. The addition of vitamins is recommended, especially vitamin C, which appears to be necessary for wound healing. The intake of proteins should be double or triple the normal intake, and the caloric requirement may be tremendous. Since the patient's appetite often is bad, tube feeding may be helpful.

The prevention and treatment of sepsis perhaps are the most important problems at the present time¹⁶. A large number of burn deaths are due to infection. The administration of a parenteral antibiotic, such as penicillin, combined with broad spectrum antibiotics is commonly recommended. Sensitivity studies on cultures taken from the burn surface may help in determining the type of antibiotics to be used. Strict aseptic technique in handling the patient is necessary, and, if possible, the patients should be in separate rooms or cubicles. Special precautions to prevent air-borne infection should be taken¹⁷. Skin grafts take better on a clean surface. If hemolytic streptococci are cultured from the surface, grafting should be delayed

until the infection is cleaned up.

No definite recipe how to treat burns can be given at the present time. The only thing a reviewer can do is to present the prevailing trends and many things may be found incorrect in the future. The treatment of burns is disappointing and many aspects are not too well understood. Moyer¹⁸ has pointed out that statistically, the modern treatment of severe burns has failed to improve the mortality. Many more patients now survive the shock phase and die later of other causes. The only thing we have done, he says, is to prolong a miserable existence, for a week or two. There appears to be a considerable variation in the individual tolerance. Patients, especially children have not survived burns involving less than 10% of the body surface, and, on the other hand, an occasional patient has survived a more than 70% burn. These cases should be studied thoroughly and an attempt should be made to determine the individual physiological background. It has happened that an adequately treated patient died while another with a similar burn but without adequate treatment survived.

We do not know the reason and until we know more about burns, the treatment will continue to be a major problem. If Moyer's statement that the modern treatment did not significantly improve the survival rate following severe burns is correct, obviously the present day methods are not good enough. Further investigation relating to the problem is urgently needed. Where will the progress most likely be made? Few surgeons have enough experience and the necessary laboratory and other facilities. Animal experiments are of limited value. In a few centers special burn units¹⁹ with a full time staff have been established and the individual practitioners give up some of their cases in order to provide better care and in order to make the patients available for intensive study. These units have made important contributions, and it is hoped that in the future, they will provide answers to some of our problems.

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Obstetrics & Gynecology

Obstetrics and Gynecology 1959

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On rare occasions a dramatic new discovery bursts on the medical world with the suddenness of a sunrise in a clear sky. More often progress is made by a succession of small discoveries each of which has to be confirmed and corroborated before it is grudgingly accepted. In these instances it is difficult to date an advance with precision just as it is difficult to tell exactly when sunrise occurred on a cloudy day. In retrospect, however, there is no doubt that dawn has come or that significant progress has been made. Just so, in a review of the field of obstetrics and gynecology it is impossible at the present time to recognize any event which will make 1959 stand out in history. However, discoveries of the past few years have brought definite changes in practice which are quite obvious in retrospect.

One sector in which considerable change has come about is that of anesthesia in labor. Most readers will remember when this consisted almost exclusively of ether or a chloroform and ether mixture dropped on a mask by a nurse or interne. How different today when almost all hospital maternity departments have an anesthesiologist on hand 24 hours a day. But, the anesthesiologists having taken over this work are far from agreed as to the best agents and methods to use. The interest being shown in this type of anesthesia was evinced by the holding of a joint session of the Section of Obstetrics and Gynecology and the Section of Anesthetics at the Joint Meeting of the British and Canadian Medical Associations in Edinburgh in July, 1959¹. In addition two papers given to the Section of Anesthetics dealt with anesthesia related to pregnant and parturient women².

Another development which has come upon us almost imperceptibly is the widespread establishment of perinatal mortality studies. Maternal mortality committees have been reviewing causes of maternal deaths for many years, but it is only in the past five years or so that similar studies of perinatal deaths have become popular. The activities of the Philadelphia group³ have been largely

responsible for this upsurge in interest, and their study has served more or less as a model for countless others. At the Meeting of the Royal College of Physicians and Surgeons of Canada held in Vancouver in January, 1959, a panel made up of representatives from five provinces reported on the stage of development reached by perinatal mortality study projects in their respective geographic areas. Our Manitoba study, begun in the St. Boniface and Winnipeg General Hospitals in 1953, has passed the experimental stage and is now firmly established on a service basis covering about half of the perinatal deaths occurring in our province. It was inevitable that such studies should lead, if not to new discoveries, at least to a reorientation and change of emphasis in many aspects of obstetrics and the care of the newborn.

One such emphasis has been the realization of the tremendous part played by prematurity in perinatal deaths and the gradual change in attitude towards this problem from one of almost complete hopelessness to one of questioning investigation. No less than three papers at the Joint Meeting of the British and Canadian Medical Associations in July, 1959, dealt with this subject of prematurity¹. Concrete evidence of progress in this field is not easy to find but one is impressed by how frequently the need for observing certain established principles is being stressed in order to prevent prematurity. Thus the conservative management of placenta previa (watchful procrestation until near term) is being advocated more and more strongly. Similarly the timing of a repeat cesarean section has come in for considerable discussion. Because of the danger of occasionally delivering a premature baby by this method some authorities are seriously questioning the generally accepted dictum of "once a cesarean always a cesarean." Others suggest avoiding this possibility by waiting for the onset of labor before performing a section. Although these may be matters where opinions differ, very few authorities condone the apparently growing tendency to induce labor for convenience, because this too will occasionally result in the delivery of a premature baby.

In discussing prevention of late abortion and premature labor the entity of the incompetent cer-

vix is receiving considerable attention. Even the most enthusiastic supporters of this concept admit that it is responsible in only a very small proportion of cases of late fetal loss, but, if this small proportion can be treated successfully, it will mark an advance in a field where up to now success has been notable by its absence. Among recent enthusiastic articles for those who would like to pursue this subject further are those of Picot et al.⁴ and Page⁵. The cause of the incompetent cervix may be a basic weakness of the cervical tissue⁴ or preceding trauma⁶. The history which suggests the lesion is one of a succession of late abortions or premature labors characterized by unexpected spontaneous rupture of membranes followed by short rather painless labors and the absence of any pathology such as intrauterine fetal death or abnormal bleeding. Usually the diagnosis is made in the second trimester of pregnancy by the finding of a partially dilated cervix with bulging membranes. Perhaps with more experience in examining the cervixes in suspected cases we will learn to recognize earlier changes which should be conducive to more successful treatment. Indeed there is much to be said in favor of diagnosis and treatment between pregnancies so long as we don't let our enthusiasm lead us into ill-advised surgery. If a Number 8 Hegar dilator can easily be passed through the nonpregnant cervix this is very suggestive of cervical incompetence. Several radiological techniques have been developed which help to confirm the diagnosis. Treatment consists of placing one or more encircling sutures at the level of the internal os. Both nonabsorbable materials⁷ and fascia⁸ have their advocates but fascia lata seems to be winning out and it is likely that this will come to be known as the Shirodkar operation after the Bombay obstetrician who described it in 1955. Vaginal deliveries after cutting the sutures are possible at term but after a successful fascial graft the preference is for cesarean section.

Perinatal mortality studies have led to more autopsies of stillborn and newborn babies and the appearance on the scene of pathologists interested enough to take special training in this field. From these autopsies it is becoming clear that deaths during or following a difficult labor, which we used to ascribe to trauma, are more likely the result of anoxia. This has made it more important than ever that we should have some dependable way of assessing the condition of the fetus during labor. Passage of meconium in vertex presentations and the discovery of abnormalities in fetal heart rates by sporadic auscultation, which are at present our most widely used criteria of fetal distress, leave much to be desired. Consequently a great deal of thought is being given to discover better methods and considerable ingenuity has been shown in developing apparatus permitting the continuous auscultation or recording of the fetal heart tones or recording changes in its electri-

cal potentials by electrocardiography.

The cause of death in the neonate often escapes the scrutiny of even the most observant clinician and pathologist. One rather puzzling finding which occurs all too frequently, especially in prematures, those delivered by Cesarean Section, and those born of diabetic mothers, is the so-called hyaline membrane. Hypotheses regarding the pathogenesis and nature of this membrane and the methods of treatment based on these hypotheses show an interesting evolution. One of the earliest ideas was that the membrane consisted of inhaled material, squames and amniotic fluid, which on "drying" resulted in the formation of a hyaline material which interfered with the transfer of oxygen and carbon dioxide in the lungs. The logical treatment was to administer wetting agents in the form of mists and aerosols but unfortunately this form of treatment did not result in a higher salvage. If, instead of resulting from inhaled material, the "membrane" had its origin in an exudate or transudate there were several ideas as to why this fluid should form. A popular one was that it was due to heart failure as left heart failure is a well recognized cause of pulmonary edema. However, digitalization of many babies does not seem to have had any effect. Chapple⁹ advocates intravenous fluids and Usher of Montreal who visited Winnipeg in September has had very encouraging results with similar treatment. Usher's concept is that the baby's excretory mechanisms are unable to cope with the breakdown products of tissue metabolism, notably potassium, and consequently these reach dangerous levels in the blood. The cardiac effects of hyperpotassemia lead to pulmonary edema and hyaline membrane. He uses insulin along with intravenous glucose to drive the potassium back into the cells. Although his early results are impressive, it does not seem likely that gross immaturity of the excretory mechanisms can be circumvented merely by dealing with one product of catabolism, namely, potassium. The pathologists will probably continue to find this red-staining material at postmortem examination in the lungs of newborn infants. Even if we could prevent its formation or cause its disappearance, we might not appreciably alter our perinatal mortality. It is not at all unlikely that this finding is merely an obvious localized manifestation of defeat in an unsuccessful battle for survival in a body whose tissues are just not capable, mainly because of immaturity, of carrying out the enormously complicated biochemical reactions necessary for life and growth.

The field of psychology in relation to obstetrics and gynecology is too vast to be surveyed adequately in a brief resume such as this. However, the increasing importance of psychological factors in the management of abortions, and pain relief in labor must be mentioned. With regard to threatened, and particularly habitual, abortions it has

long seemed that any new line of treatment if carried out with sufficient enthusiasm on the part of the doctor gave surprisingly good results. The common denominator in all of the many therapeutic regimes seems to be a close doctor-patient relationship with the doctor giving almost daily reassurance and moral support. Almost all recent articles dealing with abortions stress the importance of psychological factors in etiology and management. Even Javert¹⁰ who recently wrote a book to popularize his method of treatment with vitamin C and related bioflavonoids emphasizes the importance of these factors. He dispenses considerable "tender loving care" and "laying on of hands" to the extent of up to 26 office visits in one pregnancy. "If you do not have the time and patience do not fool with these patients." With regard to relief of pain in labor Grantly Dick Read is rarely mentioned in British medical journals any more and even in lay publications his natural childbirth with its emphasis on relaxation and breathing exercises has come up against a powerful new rival. The new magic word is "hypnosis." Surely there can be no closer doctor-patient relationship than this.

Advances in Therapeutics are very difficult to evaluate because first reports of the use of new drugs are almost always biased by the enthusiasm of the pharmaceutical company presenting them. However, there are several categories of drugs which have come into wide-spread use in the past few years which seem to be worthwhile additions to our therapeutic armamentarium. For example, chlorothiazide is almost certainly a much better oral diuretic than any previously available. Hydrochlorothiazide, because it is effective in a smaller dosage is probably an improvement. These are now being used extensively for such conditions as toxemia and premenstrual tension. Their effectiveness as diuretics is undisputed; whether they will have much effect on the course of pre-eclampsia or on women's premenstrual symptoms is less certain. A similar situation exists regarding several new hormones. If, as now seems almost certain, their activity is more predictably reliable than earlier preparations, it becomes more important than ever that we decide under what circumstances hormones are really indicated. For example, if dependable androgenic effects can be achieved simply by dispensing oral tablets of the new halogenated form of methyltestosterone ("The androgen that makes injection obsolete"), then it is more important than ever that we find out under what circumstances a woman will benefit from an androgenic effect. Similarly, it has been shown quite convincingly that oral administration of several new progestins will produce a predictable progesterone-like effect. This gives greater importance to the question of desirability of progesterone therapy in such conditions as threatened or habitual abortions where there is still disagreement

among recognized authorities. Several articles dealing with this subject are abstracted in a single issue of the Obstetrical and Gynecological Survey and the editorial comments following these abstracts should be read thoughtfully by anyone contemplating the use of these products¹¹.

Prediabetes has become widely accepted in the past few years as an entity responsible for at least some of our perinatal deaths. The condition should be suspected in a woman whose record includes one or more of the following features¹²:

- (1) a family history of diabetes
- (2) previous perinatal loss
- (3) over-sized infants
- (4) repeated abortions
- (5) glycosuria during pregnancy
- (6) hydramnios.

Infants at autopsy may show hyaline membrane, and almost pathognomonic is the finding (if erythroblastosis has been ruled out) of hypertrophy of the Islets of Langerhans¹³ and hematopoiesis of the immature type. Diagnosis cannot be made on the basis of glycosuria or fasting blood sugar levels. It depends on finding a diabetic type of glucose tolerance curve in the non-diabetic pregnant woman, especially in the third trimester. The exhibition of a diabetic type of curve in the non-pregnant woman after a challenging dose of corticosteroid is highly suggestive. Suggested management¹² is very similar to the management of the overt diabetic. Blood sugars should be kept down to reasonable levels by dietary restriction, and, if necessary, by giving insulin. Premature delivery should be considered if prenatal complications occur, notably toxemia and hydramnios. The infants should be treated in the same way as those of known diabetic mothers.

Several stillborn infants have been resuscitated by cardiac massage^{14, 15}. Both reports emphasize that this procedure should rarely be carried out and should be restricted to cases where the cause of death was one which operated only in the last minute or two preceding delivery, such as shoulder dystocia. Because of the dangers of doing unnecessary thoracotomies on babies whose hearts have not actually stopped beating and of salvaging brain-damaged babies whose hearts have stopped, it is to be hoped that the pathologist will rarely be deprived of his traditional privilege of making the first incision in the bodies of stillborn infants.

One of the most thought-provoking discoveries in the field of cancer in the past few years is the finding in a high proportion of cases, of cancer cells circulating in the blood^{15, 16}. Most earlier reports concerned pulmonary and gastrointestinal cancers in which blood stream metastasis is common. However, in 1959 Diddle et al.¹⁷ report isolating tumor cells from the circulating blood of 9 out of 14 untreated patients with invasive epidermoid carcinoma of the cervix, which is usually thought to metastasize mainly through the lymphatic system.

It is surmised¹⁸ that tumor cells are ordinarily filtered out of the blood stream in the liver and lungs. Unless there are fairly effective natural methods of preventing these neoplastic emboli from establishing themselves, our rather heroic efforts to eradicate the primary are doomed to failure in most cases if, as seems to be true, more than half of the patients already have cancer cells circulating in their blood at the time the diagnosis is made. The investigation of such bodily defenses would seem to be of the utmost importance. If there are no such defenses then the majority of cancer patients would seem to be doomed in spite of successful treatment of the primary tumor by our present methods.

In conclusion the field of obstetrics and gynecology has been surveyed in an attempt to see where worth-while advances have been made during the year 1959 or have become apparent in that year. In doing so an effort has been made to try to avoid rediscussing those points which were treated in two previous similar articles written by

Dr. A. W. Andison. Some of these points, because of further advances, might perhaps have been included and rediscussed with good reason. The areas which have been dealt with are those which one individual has found of more than passing interest. There is no doubt that many readers will be disappointed in finding some subjects in which they are particularly interested, completely excluded.

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Psychiatry

Review of Psychiatry 1959

George C. Sisler, M.D., F.R.C.P. (C)

Organic Behaviour Disorder in Children

Levy¹ has reviewed 100 cases of "post-encephalitic behaviour disorder" in children, which he believes is an entity often forgotten in the present-day pre-occupation of child psychiatrists with emotional and experiential determinants of disordered behaviour. Prominent symptoms are hyperkinesis, impulsiveness, short attention span, low frustration tolerance, and extremes of emotional response following (closely or after a number of years) trauma or severe infectious disease in infancy. Levy reports marked therapeutic success with amphetamines which therapy for this disorder was first used by Bradley² twenty years ago.

Psychosomatic Medicine

Kaplan and Kaplan³ have reviewed current theoretical concepts of the basic mechanisms by which psychological and physical factors interact to produce disease. They stress particularly the limitation of these concepts" . . . little agreement about the basic mechanisms by which psychological and physical factors interact to produce disease." They outline the various "specific" and the "non-specific" theories of causation.

The first, embodying the concept that specific psychological events or personality patterns give rise to specific diseases, have as a group promised too much on meagre evidence and to a varying extent been discarded. These are the theories of Flanders Dunbar, Freud, Garma and Alexander.

The second group of theories (those of Wolff, Selye, Gantt and Liddell) though varying widely in their concepts, attribute psychosomatic disease to "general psychogenic stress reactions" triggered by a variety of psychological stimuli. The authors suggest that in the present state of knowledge each patient should be treated as an individual and the therapeutic attempt be to diminish anxiety in the way that will work uniquely for him, ". . . unwise to assume (in an ulcer patient) that he is therefore dependent and has problems in this area."

Hypnosis

The present status of this field in which there is great current interest, was well reviewed in a recent issue of this Journal⁴.

Existentialism

In 1958 there was published a book⁵ containing a translation of the writings of some European workers in this field, and with a lucid introduction by Dr. Rollo May, an American analyst who makes therapeutic use of the psychological concepts of existentialism. Far from being the nihilistic philosophy popularly identified with the dramatist Jean-Paul Sartre and his followers, this psychology is revealed as essentially a "common sense" one which is increasingly influencing the concepts of psychotherapists on this Continent.

Pharmacotherapy

As was indicated in this Review last year⁶ the flood of mood-elevating compounds continues with the introduction of various amine-oxidase inhibitors designed to alleviate depression. Fewer ataraxic (anxiety relieving) compounds are appearing and

carefully controlled studies⁷ of those now in use for a number of years is leading (with a few notable exceptions) to the unhappy division of these (and some anti-depressants) into two groups: (1) those that are consistently effective but may produce side effects and (2) those that are psychologically largely inert but are free of side effects.

Citrated calcium carbamide (Temposil) was introduced in 1956 by a group of Ontario workers⁸ as a protective drug in alcoholism. A report by Glatt⁹ indicates that, though not without side effects, these were less frequent and severe than with disulfiram (Antabuse), and that the severity of the alcohol reaction was less violent (the authors point out that there are both advantages and disadvantages to the latter circumstance).

Studies are progressing regarding the use of hallucinogenic drugs, particularly lysergic acid diethylamide (L.S.D. 25), as adjuncts to psychotherapy¹⁰.

Schizophrenia

Advances in biochemical knowledge and widespread sophistication in the techniques of this specialty over the 60 years since the identification of the disease (or symptom?) "schizophrenia" have led to literally thousands of attempts to correlate this with some biochemical abnormality. However, no consistent abnormality has been found and the only conclusion yet reached is that in almost every chemical or physiological aspect schizophrenics as a group vary more widely than do a group of controls. Adequate assessment of the studies done in

this field in the past few years is beyond the competence of this reviewer. Yet the vagaries of research and its statistical tools are such that time after time studies by reputable workers apparently using adequate methods are contradicted by others^{11, 12, 13, 14}. In particular no one else has been able to isolate Heath's "taraxein," the compound obtained from schizophrenia serum that was reported to produce symptoms of the disease in other humans.

Journals

Since 1956 the A.M.A. Archives of Neurology and Psychiatry has had a separate "Psychiatric Section." In July 1959, in recognition of the increasing separation of neurology and psychiatry into distinct specialties, this Journal became two: "Archives of Clinical Neurology," and "Archives of General Psychiatry."

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Anaesthesiology

Recent Advances in Anaesthesia

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Artificial Respiration

M. Minuck, M.D.

"And he went up, and lay upon the child: and he put his mouth upon his mouth, and his eyes upon his eyes, and his hands upon his hands: and he bowed himself upon him, and the child's flesh grew warm."¹ Thus was described the Biblical method of resuscitation. Again in the 18th century reference is made to this ancient method. Doctor Dobkin² mentions the successful prolongation of Abraham Lincoln's life by the use of mouth-to-mouth insufflation after he was critically shot in 1865. During the past 100 years a variety of indirect methods of artificial respiration have been described. The Schafer, Sylvester, hip-lift back-pressure, back pressure, arm-lift, manual rocking and most recently the Holger-Neilson methods have all been advocated and accepted in turn by the various bodies interested in the resuscitation of vic-

tims of disaster. Besides these indirect or external methods, various complicated apparatuses have been invented to produce artificial respiration in patients rendered apneic by drowning, asphyxiated by smoke or other poisonous gases, or in deep shock following severe injuries sustained in civilian accidents or in warfare.

In recent years interest has been re-awakened in mouth-to-mouth resuscitation. This method may also be termed expired-air inflation and includes many variations of the technique. In 1958, A. S. Gordon et al.³ performed detailed comparative studies of mouth-to-mouth resuscitation and various techniques for manual artificial respiration. These studies established the superiority of mouth-to-mouth resuscitation over all manual methods in all age groups. The American Red Cross¹ now recommends mouth-to-mouth resuscitation for reviving infants, children and adults. The techniques for this method of resuscitation will not be described, instead, the reader is referred to a "Symposium on Mouth-to-Mouth Resuscitation"⁵ held under the auspices of the American Council on Medical Physics and published in the J.A.M.A.

The universal adoption of the mouth-to-mouth or mouth-to-nose resuscitation had been hampered by aesthetic considerations. It is easy to understand the reluctance of the average person to apply his lips to the cold blue lips of an apparently dead person, occasionally flecked with foamy secretions or vomitus. Another factor contributing to the unpopularity of the technique was the fear of contracting some infection from the victim and the possibility of spreading infection to the resuscitate.

To overcome these objections several simple, cheap devices have been designed. The first of these, designed by Doctor Peter Safar and Martin McMahon of Baltimore⁶ consists of two Guedel airways glued or vulcanized to each other to form an S-shaped instrument. One end is inserted into the patient's mouth and produces a clear airway to the larynx and the rescuer blows intermittently through the other end. The hands are free to extend the jaw and to pinch the nostrils. Volumes of tidal air in excess of 1500 ccs. can be introduced into the patient's lungs at rates of 10-15 times per min. The rescuer can observe the patient's chest and determine the efficacy of his methods with each breath. A variation of this technique consisting of a plastic face mask, which may be fitted over the nose and mouth and which has a short blow tube, was introduced by Doctor J. O. Elam et al.⁷

Neither of these eliminate the objection of the possibility of cross-infection. With this in mind, Lee and Ward developed the "Venti-Breather Orai Resuscitator."⁸ This apparatus consists of a rigid plastic tube attached to a face mask. The tube has two ports closed off by one-way valves and a one-way valve is incorporated in the tube itself. The patient's exhaled air passes out of the tube through one port, and the rescuer is able to inhale a fresh supply of air through the other port, thus eliminating the necessity of removing his mouth from the tube. The hands are free for supporting the jaw or for checking the pulse.

Finally another similar device has been invented by Doctor M. Brook⁹ of Saskatoon. In addition to the blow tube, exhalation port and face mask, this apparatus also has an oropharyngeal airway which is shorter than conventional airways, thus avoiding pharyngeal irritation and gagging, but helpful in overcoming obstruction which may be caused by lips and tongue.

This brief review has outlined the most recent technique of artificial respiration. Mouth-to-mouth insufflation has been investigated in the laboratory and with patients, and has been proven to be superior to indirect methods of artificial respiration. It is a useful technique with all victims. The problems of the aesthetic difficulties, of communication of disease, of complicated costly machines, and of necessity for highly-trained personnel have largely been overcome by the development of the simple devices mentioned above. No

simple, effective and aesthetic method for clearing of vomitus, blood and other materials from the mouth and throat has been developed as yet.

The American and Canadian Red Cross and the St. John Ambulance Association, have endorsed the technique of mouth-to-mouth insufflation. All other groups, such as fire-fighters, life-guards, policemen, etc., should be taught this technique and made familiar with the apparatuses that are available if more people are to be saved. As stated by Doctor Dobkin² "one should always try to save a life with a breath of air."

Fluothane-Ether Azeotrope Mixture

J. H. Daniels, M.D.

In 1956 a new inhalation anaesthetic agent called Fluothane was introduced. After several years of laboratory and clinical investigation, it was accepted by anaesthetists the world-over. This agent was found to be particularly useful since it was non-inflammable, non-explosive, non-irritating and potent. On the distaff side was its inherent toxicity particularly with reference to the cardio-vascular system, both centrally and peripherally. A special, moderately expensive vaporizer was constructed for the administration of this anaesthetic—Fluotec. To offset the disadvantages of severe cardiovascular depression, the necessity for specially calibrated vaporizer and in order to widen the margin of safety, Hudon¹ experimented with various mixtures of different liquid anaesthetic agents. Finally in 1957 he conceived the fluothane-ether azeotropic mixture. This mixture also known as Fluether, consists of approximately 2 parts of Fluothane and one part of ether, or more accurately 68.3% fluothane and 31.7% ether. The mixture has a boiling point of 51.5° C. By definition of an azeotropic mixture, the concentration of agents in the vapor phase is exactly the same as their concentration in the liquid phase.

The addition of diethyl-ether decreases intracardiac conductivity, thus antagonizing the increased myocardial excitability caused by fluothane. In low concentrations ether stimulates the adrenal medulla which partly counter-balances the hypotensive effect of fluothane. When combined with fluothane, diethyl ether will augment analgesia, increase ventilation and diminish pain reflexes and reflex arrhythmias.

Hudon's¹ first report of 2,444 cases using the azeotropic mixture was very favorable. Induction, maintenance and recovery were similar to that observed with Fluothane alone. He observed a smooth rapid induction, early depression of pharyngeal and laryngeal reflexes and a lack of secretions. Following a barbiturate induction, inhalation of the azeotrope presents little difficulty. Ventilation is better with the mixture than with Fluothane alone. Studies of the respiratory minute volume show that with Fluether the minute volume increases during induction, and also during maintenance under light anaesthesia. Hypotension is

not constant. With a rapid induction, a drop of 20 mms. of mercury may occur, but during maintenance it tends to return to a near normal level. When the concentration of Fluether is increased rapidly, respiratory depression may occur, usually accompanied by fall in blood pressure. Sometimes cardiac arrhythmias may accompany the respiratory depression and hypotension.

Eye signs are a reliable guide to depth during induction and maintenance. The pupils may dilate during the second stage and contract to pinpoint size in the third plane of the third stage.

Raventos and Dee² set out to investigate these findings in cats. One of the features of the azeotrope is its non-inflammability in clinical concentrations. One of their findings was that the azeotropic-vapor was explosive, but only in concentration above 3.5% especially when mixed with N₂O-oxygen 50:50%. These concentrations are reached during induction only. They concluded that the ether had a partially additive action to that of fluothane so that azeotrope causes the same degree of hypotension, bradycardia and respiratory depression as Fluothane, and that hypersensitivity of the heart to adrenaline is about the same for Fluether as for Fluothane alone.

Doctor C. R. Stephen³ investigated the clinical properties of Fluether and he found that the mixture produces some respiratory and cardiovascular depression. He concluded that there was no great advantage in the use of Fluether over Fluothane.

Dobkin⁴ investigated the effect of the azeotrope on acid-base balance, electrolyte balance, cardiac rhythm and circulatory dynamics. He noted that there was a slight rise in blood pH and an increase in oxygen saturation. In the 25 patients he studied there was no evidence of gross disturbance of acid-base balance. There was no significant alteration in total base, sodium, bicarbonate or chlorides even during prolonged anaesthesia. The blood nitrogen was unchanged. There was no significant rise of the blood sugar in patients with diabetes. There was a moderate fall in systolic blood pressure in 30% of patients being induced with Pentothal and Flaxedil. In four of these patients the systolic pressure continued to fall when Fluether was added. Atropine was injected intravenously and the blood pressure returned to normal.

The diastolic pressure fell with the systolic pressure, but returned to near normal levels when Fluothane was added. Dobkin et al⁵ compared the cardiovascular and respiratory effects of Fluothane and Fluether in dogs. They concluded from their results that the fall in blood pressure, pulse rate and respiratory minute volume was significantly less with Fluether than with Fluothane alone. Epinephrine induced arrhythmias were of shorter duration and less likely to prove lethal with the azeotropic mixture than with Fluothane alone. They felt that the addition of ethyl ether results in less cardio-respiratory depression and contributes to the over-all anaesthetic effect to some

degree. To prove that this was not due to a lower concentration of Fluothane, they maintained a constant concentration of Fluothane, e.g. the azeotropic concentration was such that the concentration of Fluothane was the same as when it was used alone. Since the cardiorespiratory depression was significantly less with the Fluothane-ether mixture than the protection must have been due to the added ether.

In clinical anaesthesia, Fluether has several of the advantages over Fluothane used alone.

1. It is non-explosive in the anaesthetic range.

2. Induction is smooth on account of its high potency associated with little irritation to the respiratory tract.

3. Emergence is somewhat slower than with Fluothane alone but it is just as smooth.

4. Metabolic disturbances are minimal, provided that pulmonary ventilation is adequate.

5. Fluether has a decided clinical advantage over Fluothane in that precise measurement of vapor concentration is not essential. It may be administered safely with any standard ether or trichloroethylene vaporizer.

The interest in Fluether at the St. Boniface Hospital was aroused when a member of the anaesthetic staff (R.S.L.) discovered that Fluothane was not a good analgesic agent⁶. A series was started to determine if (a) Fluether was a better agent for analgesia alone and (b) to determine its usefulness and safety when administered with standard vaporizers. All the available vaporizers were used in order to determine the effective settings for each vaporizer. Many samples of the vapor were tested for flammability. Fluether has been used with assisted and controlled respirations. It has been used with the Ayre's T-piece, closed circle and semi-closed, partial rebreathing, and non-rebreathing techniques. Ether bottles, with and without wicks were also used for vaporizing the mixture. Over 50 cases have been done to date and all with satisfactory results. Induction was smooth, maintenance was easy and recovery uneventful. No complications occurred that could be ascribed to the Fluether, nor were any flammable vapor concentrations encountered.

Summary

It is apparent that opinions differ with regard to the advantages of Fluether over Fluothane. Our own impression is that induction and emergence is slower with the azeotrope. Cardiovascular depression does occur, but it is more gradual in onset and hence is easier to reverse. We have not had to discontinue the mixture on account of severe depression and merely decreasing the concentration of the vapor has sufficed to restore more normal conditions. The fact that it can be administered with standard vaporizers is of value. Finally we feel that it is a somewhat safer anaesthetic than Fluothane but great care is still required for its safe administration.

Recent Advances in Hypothermia

H. Camrass, M.D.

The use of hypothermia goes back to 1797. Doctor McQuiston points out that the early New Englander used to freeze Grandpa for the winter in order to save food. Following this, there is no report on its clinical application until 1939 after which its use went into abeyance until McQuiston reported on its use in "blue babies" followed by Bigelow's¹ report on its possibilities in 1950. As a result of these reports immediate interest was roused in the use of hypothermia, and a vast amount of work has gone into the subject since then. Bigelow² stated recently that "despite seven years intensive experimental research, the knowledge gained has not lowered the useful range of temperature appreciably although it has made the useful range more safe." It must be remembered that investigation of hypothermia per se in man is extremely difficult. Studies are usually made against a background of surgery and anaesthesia with their concomitant physiological effects. The work on animals, in which many variables can be eliminated, still requires anaesthesia, and the results are not always applicable to man.

The basic function of hypothermia is to reduce the metabolic demands of the body, particularly of the heart, brain, liver and kidney and its application is not limited to purely surgical problems, although that is where its main use has been hitherto. Hypothermia has been used successfully as an adjunct to the treatment of burns, overwhelming sepsis, severe toxæmia of pregnancy, the follow-up treatment of cardiac arrest and the local treatment of severe gastric hemorrhage.

Since it has been shown that the brain not only has a reduced oxygen requirement when cooled, but also decreases in size due to the decreased cerebral blood flow, thus not only reducing the pressure on the brain, but also leading to a decrease in the cerebral oedema following trauma, the major application of hypothermia is in neurosurgery and the treatment of severe injury. The patient who is cooled following an episode of cardiac arrest and with signs of brain damage should also benefit³.

Nowadays the value of hypothermia in cardiac surgery is decreasing as the successful use of extracorporeal circulation is becoming more widespread. However it has been suggested by Bigelow⁴ that the two techniques may be complimentary and success with their combined use has been reported.

Hypothermia has been shown by Bernhard et al.⁵ to decrease the activity of liver cells and to preserve their glycogen levels during surgery, and as a result of these findings, hypothermia has been used as an adjunct in the emergency surgery of bleeding oesophageal varices. The value of hypothermia here is probably also due to its role in increasing the resistance of organs to trauma and oxygen lack.

The local use of hypothermia in the reduction of severe bleeding from gastric ulcers has been demonstrated by Wangenstein⁶ et al., who have shown that there is reduction in gastric motility and digestion under hypothermia.

The use of hypothermia in small infants (who stand blood loss poorly) for surgery in very vascular areas, such as the lip and palate has been suggested by Kilduff et al.⁷ They found that blood loss in the cooled infant became negligible. This technique has also been suggested by Terry⁸ to prevent hyperpyrexia under the surgical drapes during long procedures.

Bringing the temperature back to normal or sub-normal levels with hypothermia in cases of hyperpyrexia rather than just sponging the patient with alcohol has been suggested, e.g.: in acute encephalitis, polio-encephalitis, thyroid crisis and critically ill pyrexial patients⁹.

All the above mentioned instances of the use of hypothermia call for cooling to about 30° C. or higher. The next step in the program of the investigation of hypothermia is cooling to really severe levels down to 0° C. This is work which has been going on for many years, without much success, using animal subjects. The common difficulty has always been the onset of fatal ventricular fibrillation. During the past decade increasing success has been obtained by many investigators using non-hibernating animals, those who are cooling larger and larger animals, up to and including dogs, to freezing and below freezing temperatures for varying lengths of time and then successfully resuscitating them. As far as human subjects are concerned there have been several reports of accidental severe hypothermia with recovery. Niazi and Lewis¹⁰ (1958) succeeded in cooling a patient to 9° C., producing complete cardiac standstill for one hour and then rewarming without apparent residual damage.

Summary

In summary then, one may say the moderate hypothermia, i.e. 30° C. is firmly established as a useful technique in the following conditions:

1. Neuro-surgery, severe head injuries and in cerebral hypoxia.
2. Open heart surgery in conjunction with extracorporeal circulation.
3. Restoring normothermia.

Hypothermia below 25° C. must be considered, as yet, to be an experimental problem.

Hypnosis in Anaesthesia

Ronald S. Lambie, M.D.

Anaesthetists in recent years are becoming increasingly aware of the advantages of hypnosis in anaesthesia. It can be useful in a variety of situations:

1. Pre-operative preparation of the anxious, fearful or apprehensive patients.

2. Pre-operative preparation of patients for open heart procedures, etc. and other poor risk cases.
3. Anaesthetic induction and emergence hypnosis to improve the post-operative course.
4. Preparation of the expectant mother.
5. Changing of burn dressings.
6. Maintenance of unusual posture.
7. Control of chronic pain.
8. Verbal attitude to patients undergoing regional block procedures.

Weitzenhoffer¹ states that the most obvious application of hypnosis in medicine is in its use as an anaesthetic or analgesic. He points out that in the past, physicians used hypnotic anaesthesia extensively for major surgery. Before chloroform, hypnosis was a boon to surgery, but with the development of modern anaesthetics, it became out-moded. Widespread use would be impossible today, and our views must be tempered to match everyday surgical reality. Care must be taken not to heap excessive qualities upon a technique that cannot possibly be a panacea for all operative procedures.

First, not many patients can be induced into the somnambulistic state; second, not every anaesthetist will be able to produce this state; third, the time consumed would be impracticable. However it is to the 50% that can be induced to the light state, and the 20% to the medium state, that our attention must be directed. As no less a personage than Doctor William Mushin has said: "the time is already overdue for the whole subject of hypnosis and suggestibility in relation to surgery, to be investigated."

Doctor John Matas² has reported that the anaesthetics present at the Society for Experimental and Clinical Hypnosis at Chicago in October, 1958 were conservative in their outlook and felt that it was a useful tool for poor-risk cases. They emphasized that it was not a substitute for chemical anaesthesia. This seems an unnecessary emphasis. It is more important to consider what advantages can accrue to the patient from the use of the light and medium trance states. It is in this area of everyday surgery that hypnosis can be of the greatest use.

The history, physical examination and often an astonishing array of laboratory investigations are carefully studied prior to the patient's arrival in the operating room, but frequently only a cursory psychological evaluation is made, and complete reliance is placed on a light premedication and a "don't worry, I'll see you in the morning." The patient may be afraid, or is not given the opportunity to talk out his anxieties. Some psychiatrists feel that the administration of an anaesthetic may precipitate a latent anxiety reaction. A little patience on the part of the anaesthetist will bring rewards out of proportion to the time spent. The

light trance state is sufficient to remove fear, apprehension and anxiety in most patients.

Further suggestions can be given during the slow induction with thiopental sodium. This is particularly useful with the emergency patient. Marmer³ states that whenever he starts an intravenous anaesthetic he induces hypnosis at the same time. For example "take a deep breath. Now let it out. Breathe deeply again and continue breathing deeply in and out. Breathe in an easy, relaxed, comfortable way; allow the air to flow gently in and out. In a few moments you will be able to relax your entire body. Your eyes will feel like closing and with each breath you take, you will begin to feel drowsier and drowsier. As you breathe deeply and easily you will feel drowsier and sleepier. Soon you will be completely asleep. It will be a peaceful, restful sleep and when you awaken, the procedure will have been completed and you will awaken feeling wonderful." This book by Marmer, "Hypnosis in Anaesthesiology" can be thoroughly recommended to the anaesthetist who wishes to further his knowledge in this subject.

Fear increases muscle tension, which in turn stimulates greater cortical activity. This latter activity increases muscle tension. On the other hand, when fear is removed, and there is complete relaxation, the body temperature can drop 0.5 of a degree Fahrenheit, due to reduction of oxygen consumption. Not only is there a reduction in the amount of anaesthetic agents and muscle relaxants required, but it is conceivable that the stress of surgery is minimized. When relaxed, the sensory influx is diminished and produces minimal reticular formation activity and therefore less transmission via the hypothalamus and thalamus to the cortex. Geddes and Gray⁴ studied the effect of hyperventilation during anaesthesia, and showed a change from fast to slow wave activity in the electroencephalogram. Bonvallet and Dell⁵ have shown that an excess of carbon dioxide has an excitatory effect on the reticular formation and that during the hypocapnia, which follows hyperventilation, activity in the reticular formation is diminished or absent. It appears that this diminished activity of the reticular formation in some way, not perfectly understood as yet, offers protection from the stress of anaesthesia and surgery. A combination of pre-operative hypnosis and a light hyperventilation technique might be of considerable benefit to the patient.

Grasileck and Erwin⁶ have shown that a specific post hypnotic suggestion can be elicited after a general anaesthetic before the full return of consciousness. They suggest that it might be advantageous to employ hypnosis following an anaesthetic to maintain a state of analgesia. This could be extended to reduce nausea and vomiting and to encourage unrestricted deep breathing and coughing.

Hypnosis has been widely acclaimed in the field of obstetrics, and extensively used in many leading centres. Again it is not intended as a substitute for first stage sedation or general anaesthesia for the delivery, but it does decrease the amounts of narcotics and sedatives used. General analgesia is sufficient for the delivery. Under these conditions, foetal distress is minimized, and the mother enjoys a safer and happier delivery. Doctor A. Earn⁷ has kindled much interest in this field in Winnipeg.

Frequent changing of burn dressings can be a great trial, particularly to the long-term hospital patient. A light state of hypnosis with additional trilete anaesthesia in the Duke inhaler, is of great benefit. These patients often get depressed during their long stay in hospital and post-hypnotic suggestions to improve their outlook and appetite are appreciated.

Kelsey and Banon⁸ have reported upon the successful maintenance of unusual posture following plastic surgery. The deepest sort of hypnosis is required for this and if the patient can reach this state, it is a great advantage to the surgeon.

In chronically painful conditions, such as in terminal cancer, hypnosis can be of service, but in direct proportion to the depth reached. If the deep state is reached then there will be relief of pain and anxiety will be removed. Light states are of no use in these conditions.

Crasilneck and McCramie⁹ and also A. A. Mason¹⁰ have pointed out that there are a few special cases where hypnosis alone should be attempted in order to replace chemical anaesthesia. They cited such conditions as severe poliomyelitis, advanced congenital heart disease and allergies. Fortunately, the need for hypnotic anaesthesia alone is rare.

Heron¹¹ has stated "the power of language to influence human behaviour and human welfare is remarkable. Man perhaps does not have the exclusive ability to use symbolic behaviour, but he is unique in his ability to use that symbolism which we know as language." The study of hypnosis will contribute to our respect for the power and proper use of the spoken word. It will help to improve our professional position with patient and surgeon. It will help to humanize us, and in so doing, counteract some of this mechanistic depersonalized approach to the hospital patient.

This review is by no means exhaustive, and no attempt is made to detail the several advances in technique. Perhaps of more significance has been the recent official recognition of medical hypnosis on both sides of the Atlantic. Several national societies exist to measure scientifically this subjective state. For instance, can it be shown that bleeding is, in fact, considerably reduced during major surgery under hypnosis and can it be controlled during the procedure by suggestion?

In Winnipeg, the Medical Hypnotic Society has been formed by 16 members of the medical profession, representing general practice and several specialties.

Therapeutic Nerve Blocks in the Control of Chronic Pain

D. Tass, M.D.

It is the duty of the physician to provide relief of pain for his patients. Many chronic, painful conditions may be relieved by appropriate nerve blocks. A knowledge of neuro-anatomy and experience in performing therapeutic nerve blocks is a necessary requisite for the successful treatment of the types of pain discussed below.

Alcohol injections of somatic sensory nerves will cause destruction of the nerve fibres for a period ranging from three months to one year. Sympathetic nerves may be destroyed with either alcohol or phenol solutions, and the relief of symptoms will last for periods varying from weeks to one or two years.

The destruction of nerve fibres is not permanent. The somatic nerves, which at first exhibit Wallerian degeneration, regenerate along the path of the nerve fibre in three months to a year.

Grimson¹ has shown that, following a sympathectomy in dogs sympathetic fibres were found growing through the scar tissue within three months, and in some manner the sympathetic nerve supply was re-established.

Chronic pain in somatic nerves has been treated for years with alcohol injections. Trigeminal neuralgia may be relieved by injecting one or more of its branches. The severe pain is replaced by a sensation of numbness.

Chronic shoulder pain — either arthritis or subacromial bursitis, may be effectively relieved by injecting alcohol into the suprascapular nerve at the suprascapular fossa of the scapula. This nerve is the main sensory supply to the shoulder region. Following this treatment, exercise and physiotherapy should be introduced to mobilize the shoulder joint.

Segmental intercostal neuralgia is a condition that is frequently undiagnosed. The patient complains of abdominal pain, but examination of the abdominal viscera will prove negative. The tenderness in the abdomen will be found to extend on to the ribs. If an intercostal block with a local anaesthetic is applied to the nerves supplying the tender segments of the chest, and the pain is relieved, the physician should then use alcohol to block the nerves involved and a permanent cure will be produced.

Post herpetic neuralgia can be treated in the same manner.

Subarachnoid alcohol block should only be used for patients with severe pain and in the terminal stages of malignancy. These patients are poorly relieved even with large doses of narcotic drugs. The patient is carefully positioned so that only the posterior sensory nerves are affected by the alcohol. Complications of this block include 1) slight or no relief of pain; 2) motor paralysis; 3) loss

of bladder and bowel control with its increase in nursing care.

Reflex sympathetic dystrophies are painful, post-traumatic disorders, involving sympathetic pathways.

The triad of symptoms in these conditions are 1) pain, usually constant, diffuse and burning in character; 2) vaso-motor disturbances, there may be vaso-constriction or congestion of the limb; 3) sudomotor disturbances; there may be increased sweating or excessive dryness of the skin.

These post traumatic pain syndromes are usually initiated from a trigger-area which may be a fracture, a vascular embolism, a slight bruise, or a painful scar. The impulses pass up the afferent nerve fibres to the sensory horns where they synapse with the spinothalamic tracts and ascend to the brain to produce a sensation of pain.

From the posterior horn cells the impulses also spread up and down the internuncial neurones and then in a reflex arc to the lateral horn cells (the sympathetic outflow) and down the limb, to cause an abnormal sympathetic response.

If this condition is not recognized and treated early atrophy of skin, muscle, and bone can occur. The treatment consists of sympathetic blocks. Very often one or more blocks with a local anaesthetic drug will relieve this condition, but if the post-traumatic reflex is a "vicious process" a sympathectomy is necessary. This can easily be performed by a sympathetic block with phenol or absolute alcohol. Following the therapeutic block, the patients may continue with their regular occupation or housework.

The shoulder hand syndrome is another manifestation of the reflex sympathetic dystrophy. It consists of spasm of the shoulder muscles, with vasoconstriction or congestion in the hand. This may appear after trauma to the limb, but it also occurs after coronary occlusion, the coronary occlusion acting as the trigger area. This is also treated by stellate ganglion blocks and physiotherapy.

Causalgia is a post traumatic pain syndrome characterized by a burning or hyperalgesic pain, with vasomotor and sudomotor disturbances. This condition is associated with some form of nerve injury in the affected limb.

Doupe, Cullen and Chance¹ have postulated that there is an alteration in the bio-physical insulation of nerve fibres in the injured limb. As a result of this, impulses from the sympathetic fibres, which are always present in somatic nerves, jump across the altered insulation to adjacent nerves, especially to the pain and temperature fibres which have a thin myelin sheath. These authors claim that relief of pain with a sympathetic block is a cardinal diagnostic feature of causalgia.

Bonica³ states "I am convinced that if a sympathetic block is instituted early, soon after the onset

of causalgia, a large number of patients will obtain permanent relief."

It must be pointed out that if atrophy of skin, muscle or bone has developed, the results of treatment at this stage can be poor. A sympathetic block must be performed at an early stage. If a long-acting block is required alcohol or phenol are the drugs of choice.

Phantom pain: usually there is a neuroma in the stump which must be removed. If the phantom limb is accompanied by a burning type of pain a sympathetic block is in order.

Arteriosclerotic disease of the lower limbs require a long acting sympathetic "block." Alcohol or phenol blocks will cause an increase in skin temperature and a relief of pain, if there is an adequate collateral circulation. Where this is not present, viz., in the very old, in diabetic gangrene, Buerger's disease, the results of chemical or surgical sympathectomies are very poor.

Cerebral vascular accidents: although stellate ganglion blocks have been found to be of little value, Poletti and his associates⁴, claim that a stellate block can improve cases of cerebral thrombosis, but not cerebral hemorrhage. They assessed the patients' ability to improve by examining the patients' retinal vessels before and after the block. Good vaso-dilatation was usually accompanied by an improvement of the patients' condition but they also point out that the stellate ganglion block must be started early and the block should be continuous or repeated frequently.

Therapeutic nerve blocks very often produce a dramatic improvement in patients. Many patients however may not respond to therapy. Since the patients can continue with their normal routine and are not confined to bed, it is felt that alcohol or phenol blocks for their prolonged effect, are useful procedures in the treatment of chronic pain.

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Deer Lodge	Clinical Luncheon (1st Monday)			11:00 Ward Rounds		
Grace		Clinical Luncheon (3rd Tuesday)	9:00 Paediatrics 9:45 Medicine 10:30 Ob. & Gyn. 11:15 Surgery	12:00 - 2:00 p.m. Weekly Seminar		
Misericordia	1. Dept. of Surgery 2. Medical Records 3. Tissue Committee 4. Dept. of Medicine	2. Clinical Luncheon 3. Dept. Obs. & Gyn. 4. Dept. Gen. Prac.	2. Interne Committee			8:30-12:30 Ward Rounds
Municipal			7:30 p.m. Review of Deaths (2nd Wednesday)			8:30 Clinical Staff Conf. and Ward Rounds
St. Boniface	11:00 Paediatric Rounds	11:00 Surgical Rounds 11:00 Obstetrical Rounds	11:00 Grand Rounds 11:00 Cardio-Pulmonary Conf. (2nd Wednesday)	3. 8:00 Orthopedic Rounds 11:00 Tumor Clinic 12:00 Clinical Luncheon (2nd & 4th Thurs.)	11:00 Medical Rounds 11:00 Cardio-Pulmonary Conf. (4th Friday)	
St. Boniface Sanatorium		12:30 Clinical Luncheon (2nd Tuesday)				
Victoria		Tissue Committee (1st Tuesday)			1. Death Review 3. Clinical Luncheon 4. Active Med. Staff	
Winnipeg General		11-12:00 Medical Ward Rounds	9-10:00 Tumor Clinic 10-11:00 Surgical	12:15 Clin. Lunch. (1st & 3rd Thurs.)		
Brandon General			Medical Staff Lunch (Wed. prior to 2nd Tues. each month)			10:00-noon Clinical Drs. from S.W. Manitoba invited (Nov. to May)



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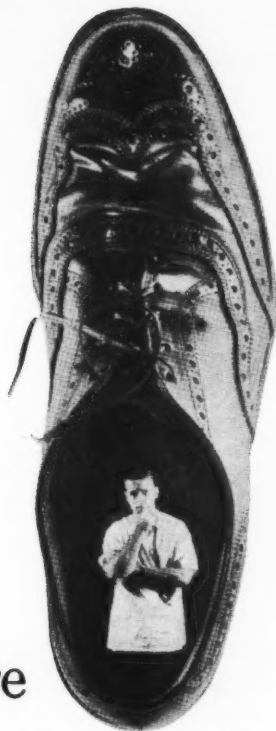
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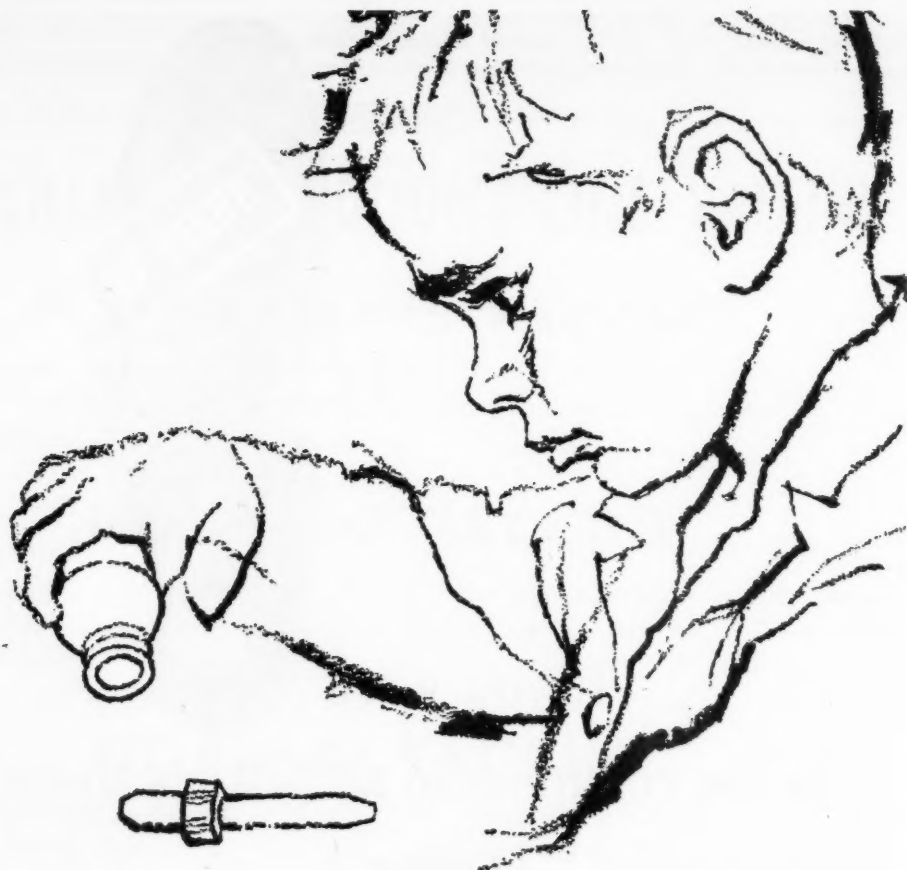
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Editorial

S. Vaisrub, M.D., M.R.C.P. (Lond.), F.R.C.P. (C.), F.A.C.P., Editor



Fruit For Thought

The delightful editorial dedicated to the banana in the July 2, 1959 issue of the New England Journal of Medicine ("Whence Bananas and Whither?") set many of its happy readers pondering upon the surprising relevance to Medicine of a variety of things botanical bearing to it no apparent relation. The banana, hitherto hardly mentioned in medical texts, would appear from sources quoted in the above editorial to contain significant amounts of serotonin and catechol amines. The ingestion of bananas, apparently, produces an increased urinary excretion of conjugates of the catechol amines, norepinephrine and 3, 4-dihydroxy-phenylethylamine (dopamine), and of the serotonin metabolite, 5-hydroxyindolacetic acid. The presence of these interesting substances in the humble banana of the slippery peel fame and the risqué story notoriety, confers upon this frivolous fruit an air of respectability. It definitely belongs.

The banana has arrived. It has proven its relevance to Medicine. But what about other fruit? Are there none deserving of inclusion in the medical hall of fame? A stroll through the apple orchards, the citrus groves, and the vineyards will soon convince the reader that, indeed, there are many worthy of taking their place of honor alongside the banana. Take the apple, for instance. Has it not, by popular consensus, the magic power, if taken daily, to keep the doctor away? Has not the fruit of the tree of knowledge, the apple that tempted Eve, all-important medico-obstetrical repercussions? Had not the apple of discord played an important role in the history of Medicine? Surely, this noble fruit has attained status.

If the status of the apple in Medicine is largely symbolic, that of the citrus fruit is down to earth. The lime, a prime source of Vitamin C, the erstwhile surcease of the scorbutic sailor sailing the seven seas, the orange, a par excellence reservoir of the same vitamin gracing the modern breakfast table, the lemon, a centuries old favorite of the elixir dispensing apothecary—all have valuable medicinal properties that are known to the public almost as well as their unexcelled vehicular qualities in various alcoholic cocktails, and mixes.

Having alluded to alcohol, it would be impolite not to refer to its source—the sweet fruit of the vine. A symbol of fertility, the grape had for centuries been regarded as a source of health, vigor and virility, its fermenting potentialities—a blessing rather than a curse. Its uses in medicine have been so widespread and manifold that they seem to overshadow its all too obvious dangers. Whether a force for good or evil, the grape has attained medical eminence unrivalled by any other fruit.

The banana, the apple, the lime, the orange, the lemon and the grape have proven their medical worth, as have to a lesser extent the olive, the berry, the nut, the exotic peyote, and many other varieties of fruit. It would be ungracious, however, to concentrate on fruit to the neglect of other deserving members of the botanical household. It would be uncivil to ignore the bark of the cinchona, the cinnamon and the cascara sagrada. It would be ungrateful to overlook the leaf of the foxglove, the mandrake, and cacao tree. It would be callous to pass up in silence the root of the henbane, the sap of the pine, and the flower of the deadly nightshade. It would be, indeed, unforgivable to omit the seed of the poppy, source of opium—the solace of the sufferer and the scourge of the addicted.

The poppy seed is not the only two faced Janus of the plant world. There are many others with power both for good and for ill. Cocaine, curare, marijuana and mescaline have bestowed upon mankind blessing and sorrow, the healing medicament and the lethal poison.

Less dramatic than the deadly plant poisons, but by no means insignificant, are the distressing and disabling morbidity purveying plant allergens—tormentors of the sneezer and the wheezer. To their well known infamous exploits in the fields of asthma, vasomotor rhinitis and hay fever may yet be added another in a seemingly remote field—that of Sarcoidosis. The pollen of the pine tree stands accused (Bethesda Hospital group of investigators), on impressive, albeit not incontrovertible evidence, of being the cause of Boeck's sarcoid. The lovely pine, subject of so much enchanting poetic, pictorial and musical tribute, is in imminent danger of becoming a member of the rogue's gallery of arboraceous Medicine.

Having taken a walk through orchard, grove and dale, and encountered much that was friendly, and even more that was not—yet little that was devoid of medical significance—the reader may be tempted to cast a retrospective glance in the direction of centuries gone by in search of botanical heroes and villains of the medical past. If he be wise, he would resist the temptation lest he get lost in the jungle of a Therapeutic that was almost all botanical. He would desist from any excursions into past plantage unless, perhaps, for reasons seasonal he insist on a glimpse of the mistletoe—the "all heal" of the ancient Druids, who believed that this wondrous plant would counteract all kinds of poisons, cure many diseases and relieve "tumultuous action of the heart." Alas poor mistletoe, all that remains of its past glory is the custom of kissing under its branches hung over the doorway—a procedure not

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The excursion into the rich green countryside of Medicine is over. The reader is now free to think — perchance to dream. Will he dream of the amorous mistletoe, the swaying palm, the stately pine, or will the magic carpet of his reverie transport him to the center of the town of Cos, where an old plane tree, in whose shade Hippocrates taught and practiced Medicine 2400 years ago, still stands firmly rooted after centuries of attrition — a living imposing symbol of durability, of lasting principles, of the unchangeable in a changing world.

Happy dreams!

Ed.

Obituaries

Hon. John Power Howden

Hon. John Power Howden, senator and former M.P. for St. Boniface, died November 4th, aged 79. Born at Perth, Ontario, he came to Winnipeg when he was two years old. Born of a line of doctors, he served as C.P.R. telegrapher and cowpuncher with Geo. Lane of Calgary before he entered medicine. He graduated in 1904 and began practice in St. Boniface. He served as alderman, then in 1916-1917 he was elected mayor of St. Boniface. In 1925 he was elected to the House of Commons and was re-elected in 1926, 1930, 1935 and 1940. In 1945 he was summoned to the senate.

Blessed with a sunny disposition and a liking for his fellow men he was so popular that race, creed and party were forgotten by his admirers who believed in the man and the doctor. Dr. Howden felt that a moral obligation similar to that of the priest rested on the doctor.

He is survived by three sons, one of whom is Dr. R. L. Howden of Norwood, and five grandchildren.

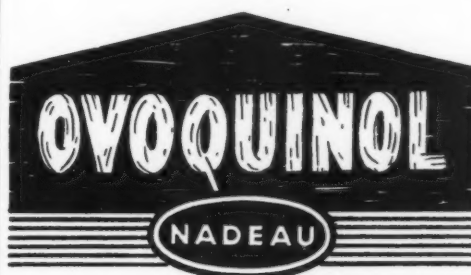


Dr. Melville Marshall Brown

Dr. Melville Marshall Brown, 51, died in the Winnipeg General Hospital on November 10th. He was born in Melville, Saskatchewan and received his education in Winnipeg. In 1933 he graduated in medicine from the Faculty of Medicine, University of Manitoba and practised in Waskada. From April 1940 to October 1945 he served with the R.C.A.M.C., returning with the rank of Major. Afterward he practised in Winnipeg where he was a past president of the General Practitioners Association of Manitoba, past president of the Winnipeg Optimist Club and a member of Harstone United Church. He was interested in golf and curling. He is survived by his wife, a daughter, a son and three grandchildren.

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Dr. Edward Johnson
Retiring President



It is probable that each succeeding head of your Association approaches the task of preparing and presenting the Presidential Address with feelings which are not entirely unmixed. The honour of having been chosen by one's colleagues to direct the affairs of their Association is held with deep appreciation. The obligation to do one's very best to determine that the activities of the Association represent the will of the majority of its members, imposes a critical sense of responsibility. One approaches the close of his term of office with a sigh of relief that these responsibilities are nearing their termination. There is also an experience of regret that meetings with District Societies will no more be enjoyed and the stimulation which arises from the discussions associated with numerous committee meetings will no longer be felt.

It was my privilege to attend most meetings of the District Societies held during the year. I am very grateful to all members of the District Societies for the gracious reception I received at their meetings. Two meetings had to be cancelled because of inclement weather. The meetings held were all well attended, their scientific papers were of a high calibre and the discussions of the business of the Association were lively and pertinent. The sense of responsibility of our rural members to the affairs of the Association is second to none. All are anxious to further the interests of their patients and of the profession through organized efforts. Each district has its own peculiar problems but one theme was common to all, namely the impact of the Manitoba Hospital Service Plan on their practice and on their patients' welfare. The operation of the Plan presented for the physician in the rural areas problems very similar to those of his urban colleagues. The tone of the meetings was that of a determination to make the Plan work as efficiently as possible. A very satisfactory working relationship has been maintained with the Plan administration through their Medical Consultant, Dr. J. D. Adamson. To assure satisfactory hospital facilities through the Plan your Association must continue to press for the provision of additional hospital beds both for acute and chronic cases.

The task of your officers, your Executive Committee and the members of the various standing committees is one of considerable proportion. The business which requires the attention of your Association increases each year. During the ten years I have been a member of the Executive Committee the problems which arise have at least doubled in number and complexity. During the

year under review your officers held thirteen regular meetings and two special meetings with the officers of the Board of Manitoba Health Services. There were nine meetings of the Executive Committee, each lasting for approximately four hours. Meetings of the standing committees totalled 65 of which the Professional Policy Committee numbered 20. There were twelve meetings of special committees. You have been kept informed of the highlights of these activities through the Association Page in the Manitoba Medical Review. This page is edited by your Executive Director, Dr. M. T. Macfarland. More details of the activities of these committees are to be found in the Committee Reports which are now in your hands or are available to you if you do not now possess a copy. It is not my desire to single out any particular committee or any special problem for comment. Some committees had tasks of more extended proportion or of more serious or urgent import than others. These matters I am obliged to bring to your attention.

I have already mentioned in passing, your Executive Director and the Manitoba Medical Review. I am sure that I would be remiss in my duties were I not to make further mention of the work of your executive office and of the office of the Review.

You are aware that Dr. Macfarland holds the dual office of Executive Director of the Association and Registrar of the College of Physicians and Surgeons. Some five years ago I had the honour to be President of the Council of the College and this year I am serving as President of your Association. I, therefore, have some knowledge of the work that is involved in managing the business of both organizations. I can assure you that the business of one has never been sacrificed to the interests of the other. Dr. Macfarland and his staff have had a herculean task to keep the two organizations operating effectually and efficiently. As members of both organizations we are greatly indebted to Dr. Macfarland for the energetic and efficient service he has rendered. I take this opportunity to thank him and his staff for services given, often beyond the ordinary call of duty. I wish to thank him and his staff for the courtesy always shown to myself on the many occasions I have found it necessary to come to their office and interrupt some important work that was in progress. Your Committee of Liaison between the College and the Association have been endeavouring to bring some relief for the burden your Executive Director carries. It is now considered advisable to obtain the full-time services of another doctor to assure the continuation of the efficient direction of your interests

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To date we have not been successful in our efforts to find a suitable person for this position. When one is appointed you will have to be prepared to carry this additional expense.

The set-up of operation of the business of the Manitoba Medical Review has been reorganized. Miss Bogden, who was formerly the Assistant to the late Mr. Whitley has been made Managing Director. The fiscal policy of the Review has become the responsibility of the Finance Committee. This reorganization has placed additional work on the already overburdened shoulders of your Executive Director. However, it is considered probable that the Review will produce a net operating revenue of approximately \$4,000. This will considerably ease the burden of the increasing costs of running the Association.

The publication of the Review is the responsibility of the Editor, Dr. S. Vaisrub and his efficient and enthusiastic Editorial Committee. I had the privilege of attending three meetings of this Committee during the year. The fruit of their deliberations is already apparent to you in the increased size of the Review, the excellence of the scientific papers and the effective reporting of the business of your Association. I am sure you will all agree that the two issues devoted to articles from the staffs of the St. Boniface and Children's Hospital were each an outstanding success in the quality of the papers presented and their general interest to the profession.

There is no doubt but that the most arduous task again fell to the lot of the Professional Policy Committee under the Chairmanship of Dr. Hugh Malcolmson. This Committee held a total of 20 meetings. Their primary task was the development of a relative value fee schedule which would provide a unit value and a monetary rate satisfactory to all members of the Association individually and as members of groups of specialized practice. Anyone who has had the task of reconciling the varied views of even two or three members of the profession will have some conception of the enormity of the task which faced the members of this Committee. However, with patience, persistence and perspicuity, their efforts have been rewarded by the finalization of a plan which appears to come

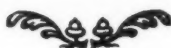
as close to Utopia as any reasonable person can expect. You will receive some of the details of this plan during the business session this evening.

The Manitoba Hospital Services Plan has now been in effect for more than a full year. Its operation has presented many problems of great or less degree for both the profession and the government. Through the efforts of your Hospital Relations Committee those problems have been largely resolved. The recognition by the government of a specified list of procedures for out-patients, as coming under the Plan, has smoothed one rough path. New problems are discerned for the future. To meet these, specific recommendations have been made by the Committee to the Executive. One recommendation which is of special importance to the rural members is the development of tissue committees in each district, supervised by the District Societies.

On the whole very good relations have been maintained between the government and the profession in the operation of the Plan. It is of utmost importance that such should continue. This remains the responsibility of the Hospital Relations Committee, which in its work performs a specialized public relations effort.

Your Public Relations Committee is becoming increasingly more effective in bringing about a better understanding by the lay population of the problems of the profession and what organized medicine is doing to improve the health services available to the people of this province. However, the scope of this task and the techniques necessary to implement improvements are beyond the capacity of any one committee. It is your Executive's opinion that the time is now for the employment of a part-time Public Relations Consultant. Those of you who attended the Luncheon today obtained some insight into the nature of this problem.

I could, and possibly should take the time to mention something of the activities of the other Standing Committees. However, I do not wish to impose further on your time. You will hear about these Committees this afternoon and evening and will have an opportunity to express your opinion on their activities and recommendations.



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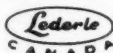
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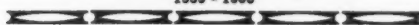


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The Medical Sundial

Dr. E. Kirk Lyon

Deputy to the President of
The Canadian Medical Association
1959 - 1960



It is my honour and privilege to address you today as the Deputy to our Royal President, The Prince Philip, Duke of Edinburgh.

Following the precedent set at our Annual Meeting this year, which was divided like Gaul into three parts, I propose to divide my remarks into three parts.

My first and most pleasant task is to deliver to you a message from our President.



A Message From The President Of The Canadian Medical Association

H.R.H. The Prince Philip Duke of Edinburgh
to all Divisions of the C.M.A.

It is a matter of regret to me that I am unable to carry out the duty of the President of The Canadian Medical Association in visiting each of the ten provincial Divisions at their annual meetings. However, I am sure that you will understand that other commitments make this impossible and that my absence is not due to any lack of interest in the affairs of The Association. I commend to you as my personal representative, my Canadian Deputy, Dr. E. Kirk Lyon, who is carrying out the many duties and obligations of the office.

It was also a disappointment to me that I was unable to be present at the joint annual meeting of the British and Canadian Medical Associations in Edinburgh last July. Such gatherings cannot fail to strengthen the ties that bind us together in the Commonwealth and the warm friendship generated there more than justified all the effort expended in arranging this most successful joint meeting.

If I could not be in Edinburgh, at least I had the great pleasure to be able to attend the Annual General Meeting in Toronto and be installed as the President of our Association. You will recall that in my Presidential Address I drew attention to the problem of sub-health. I believe that physical fitness is fundamental to positive good health and I suggested to the members of The Canadian Medical Association that they had some responsibility in this matter. I hope that much progress has already been made and I shall look forward to hearing about the results of your efforts in due course.

The Queen's visit to Canada had many aspects, but perhaps one of the most significant was a reminder to Canada that she belongs to a wider brotherhood of nations.

An address presented at the Annual Meeting of the Manitoba Medical Association, October 6, 1959.

The Canadian Medical Association, with its ten federated but autonomous Divisions, is not unlike the Commonwealth. Both have a variety of forces which tend to divide them. Both are, however, united by a common purpose. The purpose of The Canadian Medical Association is to provide for all of our fellow citizens the best in health services, which the present state of our knowledge can provide. That is quite an undertaking and it means two things; the kindly personal interest which good doctors have always shown towards their patients, and an alertness to the new developments in scientific medicine and to the sociological developments of our age.

I send to all members of the Manitoba Division every encouragement in your work and the assurance that The Canadian Medical Association will continue to take good care of your interests.

"Philip"

President

The Canadian Medical Association.



My second privilege is to pay my respects to our wives whose presence at our medical dinners always adds that touch of graciousness and decorum that is sometimes missing when we meet without them.

Some months ago I was reading a book about a family doctor. This book was published over sixty years ago and in it, the family doctor pays a compliment to his wife. I suspect the author was more familiar with the scriptures than some of my audience today because, in describing his wife, he draws very heavily on the last chapter of Proverbs. This is what the doctor wrote about his wife and I quote:

"She exercises great skill in the art of holding calls, with discernment she answereth wild questionings, and with gentle words pacifieth those who fret anxiously for her husband's coming.

"For her husband's good she compasseth much knowledge from those who run to and fro and babble, yet upon his affairs is she as a deep well out of which none can find wherewith to draw.

She considereth her husband's infirmities, and hath compassion on his flesh, so that when he cometh in from out of the night and the cold, she giveth freely unto him the warm side of the bed, and when by reason of much toil and weariness he sleepeth heavily, she riseth up silently, looketh upon the face of those who would compass him and . . . lieth for him."

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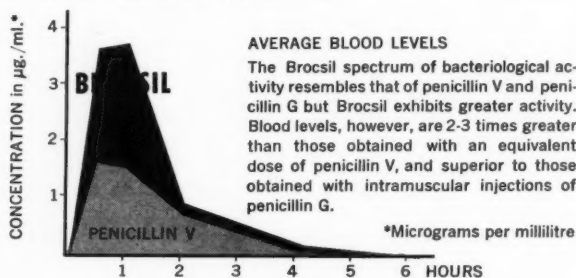


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I can do no better than to add a fervent "Amen" to this description of a doctor's wife, and I am sure the male members of this audience will agree.

Having delivered to you the message of our Royal President and having paid my compliments to our wives, may I now address myself to the doctors present and discuss some of the problems of our profession. I can best do this by viewing the Canadian scene as it applies to medicine over the past ten years. I do this because it is just ten years since I first became a member of the Executive Committee of the Canadian Medical Association, and although I have not served continuously in that capacity, my lot has been cast in close association with the Cabinet of our Association during that time.

A student of medical history would arrive at the conclusion that for the past forty years the shadow on the medical sundial has been stationary at ten minutes to twelve. Each succeeding decade has brought forth Presidents who warned all and sundry that the hour of government intervention in medical practice was imminent. The discourse thereafter varied somewhat.

There were those who exhorted the profession to don battle dress and sally forth to the fray. There were others who advocated that an effort be made to guide the inevitable steps into familiar pathways, while still others seemed so overcome by fear or frustration that a great silence was thought appropriate.

In 1959 we have witnessed the intervention of government in the field of hospitalization and the realm of medical practice of those closely associated with hospitals. What effect has this had on the shadow of the medical sundial? Has it pushed the shadow away from or closer to the zero hour of twelve o'clock?

Ten years ago the Council of The Canadian Medical Association, meeting in Saskatoon, enunciated certain principles which it believed should guide our Association in dealing with problems facing us in those days. We expressed our beliefs, among other things, in the prepayment method of defraying the cost of illness. Since then a great deal of time and effort has been expended in implementing this principle on which we staked our future.

Although our experience in this field was limited at that time we had made a start and had insured in medically sponsored plans about 8% of the population of Canada. The commercial insurance carriers had also insured a little over 8% of the population so that altogether about 16% of the Canadian people had seen fit to protect themselves against the cost of illness by the prepayment method.

In the intervening years this type of insurance coverage has gained in popularity. We find today that our prepaid plans have now insured approximately 24% of the population and peculiarly, the

commercial carriers have kept pace with us and have increased their enrolment to 24% of the population so that we now have in Canada 48% of our total population covered by some type of health insurance. Stated in other words, we had covered in 1949, 2.2 million people, and in 1959, we have 8.2 million enrolled.

Although I have no figures for the commercial companies, I think it is worthy of note that in 1959 our own medically sponsored or approved plans will pay out to doctors for services rendered an estimated 70 million dollars.

These figures would indicate that the principle of prepaying the cost of illness has slowly but surely gained in popularity during the past decade. This principle has become particularly popular in the field of labour negotiations and it is rare today to find a contract between labour and management which does not contain a "health benefit" clause. I come from an area which is highly industrialized, where about 80% of the population is covered by our medically sponsored service plan and I can categorically state that it has come to be considered an essential part of living in that area by both the public and profession alike.

In spite of this increase in popularity of the medically sponsored health insurance programmes in Canada there has been from some of the members of the medical profession a cool reception. In fact, open hostility has at times been evident. One hears all too frequently that the medical profession should get out of the business of health insurance, that we should scrap the work of the past ten years, and leave the whole problem to the commercial insurance carriers, or to the government, that we as a profession should hold ourselves aloof from all financial arrangements for the payment of the cost of illness except that which may be arranged directly between the doctor and his patient, that we should in no way deal with "third parties."

To those members of our profession who believe this, I can only say I know of no surer way of encouraging government intervention than to do as they suggest. Labour across this country has been clamouring for years for some type of government health insurance and, unless we as a profession can lead the way and supply the need, our politicians will be forced sooner or later to heed the demands of their constituents and supply for the Canadian people that which we deny them.

I believe we must explore further the field of co-operation between our own plans and the commercial insurance carriers. The interests of insurance companies parallels our own—the prepayment of medical care for the Canadian people.

I therefore submit, Mr. Chairman, that the medical profession must in self defence support this programme and do it honestly. These are our plans and should not be considered "third parties."

I am not so smug as to believe that our present system is perfect—far from it. There are many



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problems which require our constant study and improvement. We have not as yet been able to offer to all the Canadian people the benefits of prepaid medical care, but signs on the horizon are encouraging with many of our plans now offering individual coverage.

Many of the concepts, which in the past we have held dear, are under attack and it behooves us from time to time to examine their validity. We have heard much about the "fee for service principle." I am sure all of you within hearing would be horrified, if I suggested this be abandoned. It is, however, open to question whether in all circumstances the fee for service principle can be defended as the only way we, as a profession, can be remunerated for our services. As an illustration let me remind you that under a fee for service principle, when related to our medical service plans where a standard fee is rigidly maintained, the doctor who is physically capable of performing the greatest number of services and not necessarily the best services is the one whose remuneration becomes the greatest. This system could carry with it quantity medical care and fail to adequately remunerate the careful, skilful practitioners rendering a high quality medical service to his patients.

Furthermore, it is highly doubtful that many of the new and complicated procedures, which require the team work of many highly trained individuals, can ever be paid in any other way than on a unit basis.

In the future I would visualize a change in system for remunerating our teachers of medicine. It is becoming increasingly difficult for our clinicians to devote half their time to teaching and make a decent living on a fee for service basis during the remainder of the day.

The fact that approximately 20-25% of the medical population of Canada today choose to earn their livelihood by other than a fee for service basis further strengthens the view that this principle, so long defended by our profession may require further study in the future.

One could go on discussing such other things as doctor-patient relationship, freedom of choice, free enterprise — all principles on which we have built our heritage in Canadian medicine, and on which we must depend until something better is evolved. My only plea is that we keep an open and fertile mind. That we constantly study and improve, where improvement is indicated, in order that we may at all times work towards the goal which should always be before us — the provision of the best medical care for the Canadian people.

I would suggest to those of our profession who have been charged with the operation of our prepaid medical care plans to keep constantly in mind the high ideals which motivated those who initiated these plans. They must remember that when they are producing rules and regulations for the conduct of our affairs that one of the prime objects

of setting up prepaid medical care plans was to bring doctor and patient together so that we, as doctors, could not only better serve our patients but also obviate, if possible, encroachment of a government bureaucracy into the practice of medicine. Let us not seek to avoid government bureaucracy by creating one of our own. The members of our profession who undertake these tasks must always be in the unenviable yet responsible position of serving well two masters, the subscriber who pays the bill and the doctors who render the service. They must not allow our plans to become tight little insurance companies — money changers in the temple of Aesculapius!

Ten years ago we thought that governments were deeply involved financially in health measures in our country when, in 1949, the federal and provincial governments of Canada spent 174 million dollars on health measures. In 1959 we find these same governments spending 552 million dollars in the health field, about three times what was spent ten years ago. It is true that we must relate this to the national income which has doubled in this same ten year period.

He must be blind indeed who cannot see the trend in this regard which is occurring in Canada. Had a speaker in 1949 predicted this phenomenal rise in government expenditures in the health field, he would probably have been branded as a false prophet.

However, I believe these expenditures will increase still further as time goes on and the public demand that more and more of the benefits of health services be brought closer to their door by government assistance.

It must be evident to all that, although government in itself can never render the necessary medical care to the Canadian people independent of the co-operation of the medical profession, the medical profession cannot render the necessary care without a large measure of government support.

There is some evidence among our ranks of fear of government intervention. I was impressed, as was our General Secretary, when we visited the World Medical Association in 1955 and the British Commonwealth Medical Conference in 1959, of the fear and distrust expressed by many national associations of their governments. Fortunately to date we in Canada have not experienced the direct intervention of government in the personal liberty of the profession found in so many other countries. I would like to believe that this is due to the fact that the medical profession and government have been willing to sit down together and discuss medical economic problems. The medical profession must not dig in its heels, but continue to stand ready to consider all proposals genuinely designed to improve the health of the Canadian people. Our particular role should be to guide and direct government to the end that the best service we can



throughout the practice of medicine...

anxiety either alone or complicating physical illness



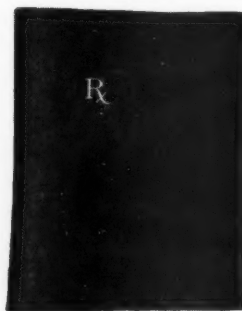
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provide is rendered to the public and to above all else preserve the dignity of our profession. I believe in the over-all picture that what is good for the people of Canada is good for the medical profession.

The development of universal hospital care insurance is so fresh in the minds of most of us that we as yet only dimly comprehend its obvious merits and possible complications. It is true that the hospital insurance plan has encroached to some mild degree on the private practice of medicine, but we must, in all honesty, admit that government has interfered as little as possible with the private practitioner.

With the great upsurge of hospital construction which is taking place in Canada and the improvement of hospitals with government assistance, with the improvement in hospital staff organization directed by The Canadian Council on Hospital Accreditation, we are bringing to the community hospital a higher standard of hospital and medical care than ever before enjoyed in this country. While the improved community hospital can never be expected to bring to the small community all the benefits of our science, procedures which a decade ago were considered impossible, are now commonplace and done with safety.

We must, however, realize that the passage of Bill 320 of the House of Commons of Canada with one stroke of the pen radically changed the business practices of hospitals across Canada. The hospitals of our country were at least partially prepared through their experience with Blue Cross and have experienced a minimum of disruption.

I would call to your attention the fact that a similar Bill could radically change our system of medical practice. At least two responsible politicians in two of our provinces are openly advocating a medical care insurance programme for their provinces. I ask you — are we prepared?

There was a time when we could hide behind the possible cost of such a programme but the present indications are that governments at all levels are becoming less fiscally responsible and the lack of money does not always act as a deterrent.

These increases in government spending in the health field may be considered by some as evidence of "creeping Socialism" in our country, but I would remind you again that the improvements we have experienced have been effected in a very large measure by co-operation between government and the organized medical profession.

I cannot emphasize too strongly that we as doctors must put forth some effort ourselves and not leave everything to government. Remember "that any government big enough to give you everything you want is big enough to take away everything you have."

There were in Canada in 1949, about 14,000 doctors. Today, ten years later, our medical population stands at about 19,000. This increase has been

brought about by graduation of medical students trained in Canadian medical schools and augmented by physicians educated abroad. In 1949 we had ten medical schools in Canada. In 1959 we have twelve medical schools. I would call to your attention that the establishment of these new medical schools and the maintenance and improvement of the existing schools entails a great expenditure of public funds.

In Canada last year there were approximately 830 medical students graduated from our medical schools. I am reliably informed that 1013 doctors last year presented themselves to the Royal College of Physicians and Surgeons of Canada for examinations of specialties in one field or another. One would query the advisability of training this large number of specialists and one would query also the number of these specialists who, of economic necessity, would find themselves doing general practice. Although I have the greatest sympathy and admiration for those dedicated doctors who devote a large part of their time to the training of our medical population, it would seem that some further assessment of this particular problem is urgently required. This study might determine the proportionate number of specialists to general practitioners required to best serve the Canadian people.

The rapid increase in medical groups and clinics composed largely of specialists would lead one to believe that perhaps in the future the pattern of practice may be radically changed and the solo practitioner will become the exception rather than the rule.

No matter what changes may take place in the training programme on both the undergraduate and the graduate level, the Canadian medical profession must be adamant that nothing be allowed to hamper the clinical instruction of our students, and provision of clinical material must be assured. This is already presenting some problems in those provinces where universal hospital care is in force.

Now, Mr. Chairman, may I, as one whose service is becoming long in the practice of medicine and in the council of organized medicine, be permitted to pontificate a little.

One does not arrive at the position which I now have the honour to occupy without having some experience in the practice of medicine. It has been, over the years, a sobering experience and one which causes one to reflect on the long term developments rather than those things which seem expedient at the moment.

There are in our midst what are known as "the angry young men of medicine." These young men are not peculiar to our profession but are found in all walks of life. Who are these angry young men of medicine? As the name implies they are men who are young in their professional careers. They have gained their education and conducted their practice in the midst of a buoyant economy. In

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SHALOWITZ, M.: CLINICAL REVIEW, 1:25 (APRIL) 1958.

Use of Glucosamine-Potentiated Tetracycline in the Treatment of Upper Respiratory Infections in Children

NATHAN, L. A.: ARCH. PED. 75:251-255 (1958)

Tetracycline with Glucosamine in the Treatment of Gonorrhea in the Male

MARMEL, M., AND PRIGOT, A.: ANTIBIOTIC MEDICINE & CLINICAL THERAPY, 6:117-119 (FEBRUARY) 1959.

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MERSHEIMER, W. L.: ANTIBIOTICS ANNUAL 1958-1959, MEDICAL ENCYCLOPEDIA, INC., N.Y., 1959.

Treatment of Gynecological Infections with Glucosamine-Potentiated Tetracycline

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Use of Tetracycline with Glucosamine in Dermatology

CORNBLEET, T.; CHESROW, E., AND BARKSY, S.: ANTIBIOTIC MEDICINE & CLINICAL THERAPY, 5:328 (MAY) 1958.

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many cases they have known neither want nor privation. On the face of it one would think that of all people they have the least license to be angry, rather one would expect them to be smug, self complacent, satisfied. I, however, gain the impression they are angry because they realize that unless something is done, the natural cycle of events will change, perhaps radically, conditions as they now exist. It is as if they see in the distance something ominous that will destroy the very foundations of the things they have learned to cherish.

We who are older see the same signs, but we have lived longer; we have practised under other conditions and over the years we have had cause to wonder a little at the dogmatisms of oft repeated beliefs. We are not as sure of some things as we were in our younger days. The black and white of youth has mellowed into a larger area of gray with a little of the distinctive color at the edges. We realize even without thinking about it that changes have come so gradually they have disturbed us but little, which suits our desire for peace. Things are the way we have fashioned them, and even if we have not studied all the changes that have occurred, we haven't the energy to go through the strenuous process of evolving new practices.

The "angry young men" on the other hand have had nothing to do with the formation of the present policy. They examine it, not in the light of conditions which gave it birth, but only in the light of the present and their fears of the future. On this basis they find it inadequate, and, in saying so, sometimes before they have a suitable replacement, they are labelled "the angry young men."

Several years ago I could have identified myself with these angry young men, and I am not sure that those of us who had a part in enunciating our principles on health insurance ten years ago were not considered the "angry young men" of our day.

So I say to these young men, continue your questioning of the problems of medicine, think about them, discuss them among yourselves, and with the older members of the profession, give the problems your careful scrutiny and when you are sure you are right have the courage to change those things which require change. Such actions constitute progress. Yours is a grave responsibility!

Now, Mr. Chairman, what is our future? I am by nature an optimist. I have supreme faith in the days ahead. I have no patience for those faint hearts who would direct their sons and daughters to careers that are socially less useful and personally less rewarding than that which you and I have enjoyed as members of this, the greatest profession of all.

Ten years ago, when I had the honour to be president of my own Division I stated in my presidential address certain beliefs which have remained unshaken. I can do no better than repeat them to you today.

"We must continue our search for better scientific methods."

"We must keep our professional and personal standards high."

"We must continue our study of medical economic problems."

"We must adopt a positive attitude."

"We must lead the way."

It is my belief that in this rapidly changing world the position which our profession has made for itself in society is not being challenged. The medical profession is assured of its place in the firmament. The challenge to us is to adapt our thinking to changing conditions so that we may help lead the Canadian people to that better and fuller life, the basis of which is fitness in mind and body.

Ladies and Gentlemen, the shadow on the medical sundial is at twelve o'clock.

YOUR EYES

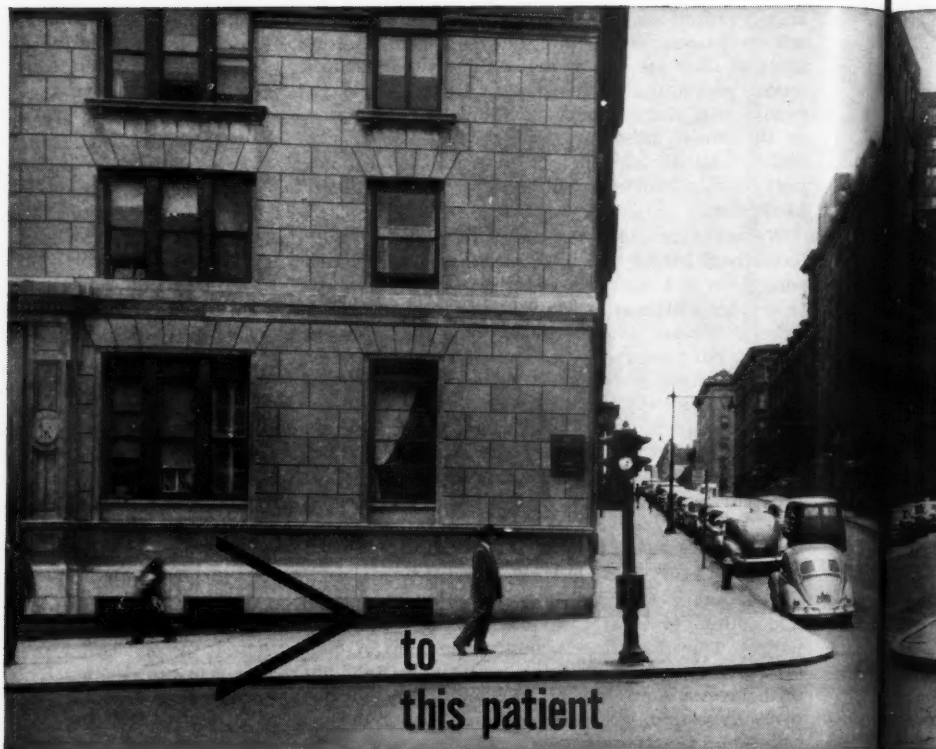
Medical authorities have found that one-quarter of all bodily energy is expended through your eyes. If your eyes are subject to undue strain, your whole system carries a heavy, added burden. Even though not aware of eye discomfort, you may be depleting your physical and nervous energy. Three years between eye examinations is beyond the "safety margin." It is for your sake that we urge you to see your Eye Physician now.

It is the only way you can be sure your present glasses are suited to your present needs. If they are not, your whole body pays the penalty, in your entire round of daily activities.

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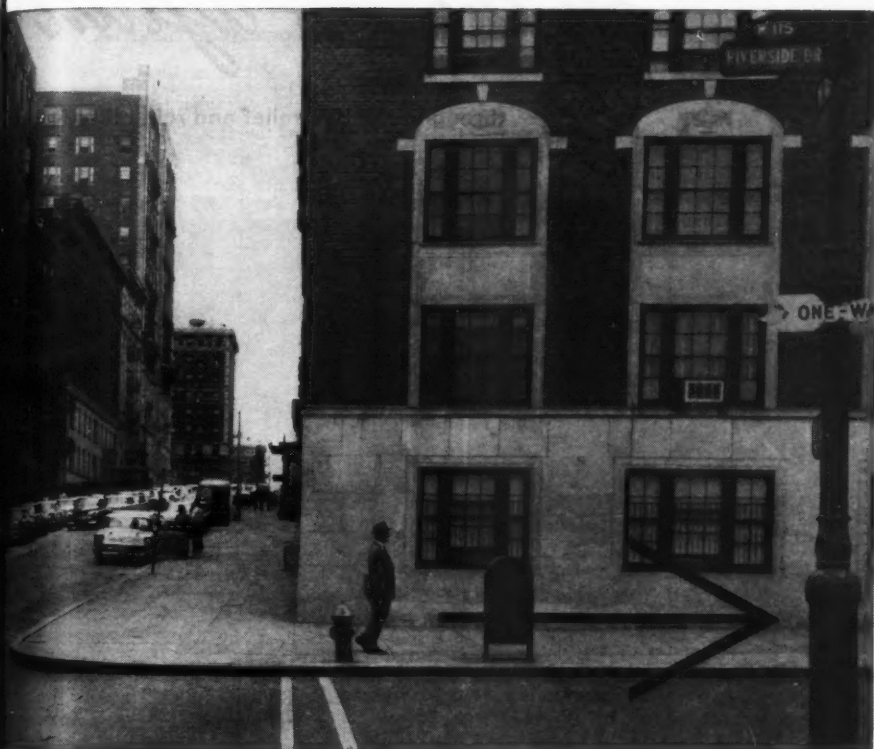


**with intermittent claudication
every block was a mile long**

now... **arlidin**
makes the blocks so much shorter...
he can walk many more of them in comfort

Arlidin is available in 6 mg. scored tablets, and 5 mg. per cc.
parenteral solution. See PDR for dosage and packaging.

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arlidin.

brand of nylidrin hydrochloride N.N.D.

safely increases local blood supply and oxygen
where needed most... in distressed "walking" muscles
for sustained, gratifying relief of pain and spasm in

intermittent claudication of
arteriosclerosis obliterans
thromboangiitis obliterans
diabetic atheromatosis

night leg cramps
ischemic ulcers
Raynaud's syndrome
cold feet, legs and hands

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For the patient who does not require steroids

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Reciprocally acting nonsteroid antirheumatics... more effective than salicylate alone.

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Sodium salicylate U.S.P. 0.3 Gm. (5 gr.)
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or for the patient
who should avoid sodium

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Ascorbic acid 50.0 mg.

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Comprehensive synergistic combination of steroid and nonsteroid antirheumatics... full hormone effects on low hormone dosage... satisfactory remission of rheumatic symptoms in 85% of patients tested.

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College of Physicians and Surgeons of Manitoba

Annual Meeting — Registrar's Report

Mr. President and Members of Council:

1960 Elections:

In 1960 elections will be held in the following electoral districts:

Electoral District No. 1:

(now held by Dr. R. L. Willows)

Electoral District No. 2:

(now held by Dr. Ed Johnson, moved to Wpg.)

Electoral District No. 4:

(now held by Dr. S. S. Toni, Altona)

Electoral District No. 5:

(now held by Dr. A. L. Paine, Ninette)

Electoral District No. 7:

(now held by Dr. W. Malyska, Deloraine)

Electoral District No. 8:

(now held by Dr. H. C. Stevenson, Minnedosa)

Electoral District No. 10:

(now held by Dr. P. Johnson, Flin Flon)

Electoral District No. 11:

(3 members to be elected—present members include Drs. A. P. Guttman, B. Dyma and C. B. Stewart).

Dr. A. R. Birt holds appointment as representative from the Faculty of Medicine, University of Manitoba until 1960. Dr. C. H. A. Walton was appointed in 1958 for a four-year period ending in 1962.

Meetings:

From October 1, 1958 to September 30, 1959, the following meetings have been held:

- 1 Annual meeting of Council on November 8, 1958.
- 1 Special meeting of Council on May 2nd, 1959.
- 8 meetings of the Registration Committee, 4 prior to and 4 subsequent to the May meeting of Council. (Additional meeting October 15, 1959).
- 1 meeting of the Legislative Committee of Fifteen held June 29, 1959, subsequent to the May meeting of Council.
- 2 meetings of the Liaison Committee, 1 prior to and 1 subsequent to the May meeting of Council.
- 1 meeting of the Discipline Committee held subsequent to the May meeting of Council. (Additional meeting held October 20th, 1959).
- 3 meetings of the Executive Committee, 1 prior to and 2 subsequent to the May meeting of Council.
- 4 meetings of the Specialist Committee, 2 prior to and 2 subsequent to the May meeting of Council. (Additional meeting October 28, 1959).
- 1 meeting of the Internship Committee held prior to the May meeting of Council.

This is a total of 24 meetings held during the year which is the same number as were held the

previous year. Minutes of these meetings have been distributed to the Council members.

Student Registration:

34 applications were accepted for student registration as compared with 73 for the previous year. There are 51 students in first year medicine, 9 of which are repeaters and 11 have not yet registered.

Enabling Certificates:

A total of 98 Certificates were issued as compared with 125 the previous year. 55 were issued to University of Manitoba graduates or student registrants (Interim Certificates), 5 Provincial Registration Certificates were issued to Manitoba registrants, four of whom qualified in the United Kingdom and 38 to graduates from other schools. These include 3 from other schools in Canada, 5 from the United Kingdom, 4 from the U.S.A., 20 from Europe and 6 from Asia. 29 applications were deferred and one was refused. 8 applicants were interviewed and eight other applicants, to whom Enabling Certificates were granted were interviewed when they came to write the examinations in Winnipeg.

At the request of the College, the Credentials Committee of the University of Manitoba met on three occasions. 21 applications were considered and of these 10 were judged to be qualified in the Basic Science subjects, 11 were required to write all examinations and 5 were pending consideration by the Credentials Committee.

Certificates of Licence (Temporary):

40 Certificates of Licence (Temporary) have been issued, which is 1 less than for the same period last year. The institutions in which the applicants qualified were University of Manitoba, 22; other Canadian, 9; United Kingdom, 7, and European, 2. The Majority of certificates, 20, were issued to hospital internes, 6 to members of the Armed Forces, 3 for those serving as Locum Tenens for other physician, 9 for combined internship and Locum Tenens, 1 to an employee of the Dominion Government and 1 to an employee of the Provincial Government.

34 were issued to residents of Greater Winnipeg while 6 were outside that area. During the year, 33 Certificates of Licence have been cancelled, 3 were extended and 2 were reinstated. 11 who previously held Certificates of Licence converted them to permanent registration. Of a total of 369 Certificates of Licence issued since the 1947 Amendment to the Medical Act became effective in 1948, the number valid at September 30th, 1959, was 62.

Interne Enrolment:

46 persons were enrolled on the Interne Register since the Interne By-Law was instituted November

Now they'll take their medicine — and like it!



Erythrocin® Oral Suspension

(ERYTHROMYCIN ETHYL SUCCINATE, ABBOTT)

It is no secret that erythromycin is an exceedingly bitter antibiotic substance. Coated tablets, of course, present no problem. But pediatric suspensions are another matter. Through the years many masking techniques have been tried. Still the basic problem of taste — particularly with an uncooperative youngster — has been with us.

Until now, that is.

Now, with a new derivative of erythromycin — Erythrocin Ethyl Succinate — the taste problem has finally been resolved. This new vehicle all but eliminates bitterness and aftertaste. Erythrocin Oral Suspension is sweet and good-tasting, with a citrus flavor most youngsters find especially pleasing.

And what about therapeutic effectiveness? Ample. You can expect high blood levels within 30 minutes,

peak concentrations within the hour, and therapeutic levels for about six hours after each dose.

In contrast to many broad-spectrum antibiotics, Erythrocin has a *bactericidal* action against many of the common pathogenic cocci. It is indicated for the infections caused by most gram-positive organisms — notably *staph*, *pneumo* and *streptococci* (including *enterococci*). Allergy is almost unknown. After millions of prescriptions for Erythrocin, serious side reactions have been practically nonexistent.

Erythrocin Ethyl Succinate Oral Suspension (ready-mixed and requiring no refrigeration) is supplied in 60-cc. bottles. Would you like the literature? Ask your Abbott man, or write us at ABBOTT LABORATORIES LIMITED, P.O. Box 6150, Montreal.



8, 1958. 2 have been cancelled, 1 completed his internship and 1 did not come, due to immigration difficulties.

Certificates of Registration:

104 Certificates of Registration were granted, which is 21 more than for the same period last year. Of these, 28 were graduates of the University of Manitoba, 10 from other Canadian Universities, 2 from the U.S.A., 41 were from the United Kingdom (which is 13 more than Manitoba registrants), 15 from Europe, 7 from Asia and 1 from Australia. Of these, 60 settled within and 21 outside the Greater Winnipeg area, 21 have not practised in the province and 2 were cancelled on the direction of the Registration Committee. At the end of the current year 5 of the 1959 registrants had moved from the province.

Number of licensed medical practitioners in Manitoba 1949 - 1958:

Year	Greater Winnipeg	Outside Winnipeg	Totals
1949	528	233	761
1950	546	229	775
1951	564	235	799
1952	573	251	824
1953	604	260	864
1954	659	253	912
1955	712	262	974
1956	695	266	961
1957	723	273	996
1958	756	266	1022

The figures for September 30, 1959, are as follows:

	Permanent	Temporary	Totals
Greater Winnipeg	757	50	807
Outside Winnipeg	246	12	258
Totals:	1,003	62	1,065

Specialist Committee:

Of a total of 43 enrolled during the year, all except 6 did not have Royal College Fellowship or Certification. 8 of those who were previously temporarily enrolled were placed on the Permanent Specialist Register, 2 were deferred and 1 was deleted. 10 are temporarily enrolled on the Specialist Register at the present time and are writing the Royal College examinations.

Life Membership:

Since the 1958 amendment to the By-Law came into effect, Life Membership Certificates have been issued to the following members:

Austman, Kristjan Jonsson — Winnipeg.
Bissett, Edgar Douglas Richmond — Winnipeg
Boon, Alfred Henry — Birch River
Chown, Henry Bruce — Winnipeg
Donovan, Charles Roy — Winnipeg
Grant, Keith Gordon — Winnipeg
McRae, Duncan Farquhar — Winnipeg
Morse, Harry Dodge — Winnipeg
Riddell, Leroy Henry — Thompson

Schultz, Stuart Duncan — Brandon
Sharman, William James — Winnipeg
Skafel, Einar Jonsson — Brandon
Sommerville, Andrew Neville — Winnipeg
Stewart, Roy John — Winnipeg
Taylor, Ellen Fraser — Winnipeg
Thompson, Steinn Olafur — Riverton
Wood, William James — Winnipeg.

Total of 17 Certificates issued — 12 from Greater Winnipeg and 5 from outside Winnipeg.

Changes in the Register:

We are reminded of the losses there have been by death during the year. The names of the deceased members have been read, and included from Greater Winnipeg 4, outside Winnipeg 2, and outside the province 3, making a total of 9.

Additions to the Register and changes in address numbered approximately 555 while inquiries received from all applicants for Enabling Certificates, Certificates of Licence (Temporary) and Certificates of Registration were approximately 481.

Several physicians inquired about locations and in the majority of instances the inquirers were put in touch with available openings.

Annual Fees Outstanding:

Annual fees outstanding September 30, 1959 — 5.

Cash Receipts:

The cash receipts are contained in the Treasurer's Report but are outlined in greater detail below.

Annual Fees:			\$10,904.00
Registrations	81 x \$100.00	\$ 8,100.00	
	2 x 95.00	190.00	
	9 x 90.00	810.00	
	13 x 80.00	1,040.00	
		\$10,140.00	10,140.00
Temp. Licences	40 x \$10.00	\$ 400.00	
Interne Enrol.	46 x 5.00	230.00	
		\$630.00	630.00
M.C.C. Cert.	38 x \$25.00	950.00	
	55 x 5.00	275.00	
(Prov.)	5 x 5.00	25.00	
		\$ 1,250.00	\$ 1,250.00
GMC. Cert.	13 x \$ 5.00	65.00	
Student Reg.	34 x 1.00	34.00	
Document. fees	97 x \$25.00	\$ 2,425.00	
	2 x 23.64	47.28	
(Part)	1 x 10.00	10.00	
		\$ 2,482.28	\$ 2,482.28
Specialist Registrations		215.00	
Sale of Lists of Physicians		363.00	
Sale of Lists of Changes		106.00	
Cred. Com. U. of Man.	18 x \$5.00	90.00	
Miscellaneous Income		.24	
Suspense Account			
(Taken in during current year only)		88.41	
		\$26,367.93	

Respectfully submitted,

M. T. Macfarland, M.D., C.M.,
Registrar.

September 30, 1959.



IN DEBILITATING DISEASE

Patients receiving

NILEVAR®

Eat more...

Feel better...

Recover faster

Compared to control patients, those receiving Nilevar (brand of norethandrolone) have repeatedly demonstrated more rapid and more complete recovery from serious acute illness and increased comfort and well-being in chronic illness.

A multitude of case histories are now adding individual clinical color to the earlier controlled investigations which defined the actions of Nilevar as an effective aid in reversing negative nitrogen balance and in building protein tissue.

In typical case reports such gratifying comments as these appear:

Underweight — "Appetite considerably increased within one week. Sense of well-being and vigor increased along with increased appetite."

Prematurity (Birth weight: 2 pounds, 4 ounces) — "Gradual improvement in appetite and capacity for formula. . . . Excellent progress and weight gain for a very immature infant."

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Third Degree Burn — ". . . soon began eating all that was offered. . . . Began to show signs of hope for recovery. . . . Perhaps one of the greatest changes was in the appearance of his wounds which were so very much improved."

The dosage for adults is 20 to 30 mg. daily in single courses no longer than three months. For children the daily dosage is 0.5 mg. per kilogram of body weight, in single courses no longer than three months.

Nilevar is supplied in tablets of 10 mg., ampuls of 25 mg. (1 cc.) and Nilevar Drops of 0.25 mg. per drop.

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Social News

Reported by K. Borthwick-Leslie, M.D.



Greetings to All for the Festive Season

Catching up with some of the news omitted from the column last month, congratulations are in order to: Dr. N. L. Elvin, who in October was elected President of the Canadian Ophthalmological Society at their meeting in Niagara Falls, Ont.

Dr. Manly Levin, former Fellow in Surgery of the Mayo Foundation, of Winnipeg, Man. was given an award from the Edward John Noble Foundation of New York for "outstanding work in surgery, especially thoracic, and for the excellence of his work on Performances of the Stationary Vertical Screen Oxygenator."

Dr. Cecil G. Sheps, formerly of Winnipeg, general director of the Beth Israel Hospital in Boston, has been appointed Professor of Medical and Hospital Administration at the University of Pittsburgh's Graduate School of Public Health.

Drs. Percy Barsky, W. Wallace Grant and Murray McLandress have been elected Fellows of the American Academy of Paediatrics.



Welcome to the building, to John C. Graham, M.D., who announced the opening of his office at 428 Medical Arts Bldg. — for the practice of Thoracic and Cardiovascular Surgery.



St. George's Church, December 4, 1959. Miss Sydney Young, 284 Yale Ave. became the bride of Dr. A. C. (Cam) McInnes. The wedding reception was held at the home of the bride's parents.



September, 1959, Lillian Mary Watson of Fort Garry, Man. became the bride of Dr. Ralph Durham Bird of King's Park, Fort Garry, Man.



Happy 1960 to our new arrivals:

Dr. and Mrs. G. F. Bondar (nee Bulman) welcome Bruce Alan as of October 5, 1959, at the University Hospital, Edmonton, Alta.



Dr. and Mrs. J. K. Mohamed, Altona, Man., their third daughter, Leslie Ann, on October 6, 1959.

Dr. and Mrs. Robert Corne announce the arrival of Lesley Carol, on October 24, 1959.



Dr. and Mrs. T. F. Gelley (nee Twiner), a son, Thomas Dick, on October 14, 1959.



Dr. and Mrs. R. G. Handford, October 28, 1959, welcomed a son, Ian Robert.



Dr. and Mrs. John Choate, Steinbach, Man., June 12, 1959 (one I missed before, I believe), their son Gordon John, baby brother for Catherine Wynne.



Dr. and Mrs. Jack S. Olin, Toronto, Ontario, announce the birth of their third daughter, Judith Michelle on November 3, 1959.



Dr. and Mrs. James B. Ross announce the birth November 22nd, of William Wylie.



Dr. and Mrs. Charles M. Burns welcome a son, Andrew Rossini, on November 9, 1959.



Dr. and Mrs. Lyle Johnson (nee Bleeks) happily announce the arrival of Lyle Scott, November 22, 1959.

Welcome to the grandparents' club, Cherry!



Last but of course not least, K. Borthwick-Leslie proudly joins the same club in announcing that J. David Borthwick-Leslie and Joyce (nee Heath) on November 5, 1959, in the Royal Victoria Hospital, Montreal, became the proud parents of Jennifer.

The most beautiful girl in Montreal. Natch!



Happy and prosperous 1960 to all readers!

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deficiency . . .*

Vitules*

Multiple Vitamin Capsules



indicated:



- For the patient on a restricted diet
- For the patient with poor eating habits
- For the patient given to "food fads"
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EACH CAPSULE CONTAINS:

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(from Carotene 1000 units; from fish liver oils 4000 units)	
Vitamin D	500 I.U.
Thiamine	1 mg.
Riboflavin	2 mg.
Niacinamide	10 mg.
*Calcium d-Pantothenate (as dl Salt)	10 mg.
Pyridoxine	1 mg.
Ascorbic Acid (as Sodium Salt)	30 mg.
Liver Concentrate N.F.	20 mg.
Dried Yeast U.S.P.	125 mg.
*The significance of this vitamin in human nutrition is not yet established	

MAINTENANCE DOSE: One Vitule daily

THERAPEUTIC DOSE: One Vitule, three or four times daily

SUPPLIED: Bottles of 30, 100 and 1000

Association Page

Reported by M. T. Macfarland, M.D.

Notes from the Annual General Meeting

The Committee Reports were published in the November issue. The following additional notes were made at the General Meeting.

Public Relations

The Chairman advised that the article as mentioned in paragraph 5 of the report, appeared in the Free Press on September 19th. This was an interesting and readable publication and a successful trial for the Committee. The Committee recommended that Mr. Gene Telpner be offered part-time employment by the Association to do similar publicity work and any other press work the Association requires. This recommendation was supplemented by the Executive Committee, "THAT the recommendation of the Public Relations Committee that Mr. G. Telpner be appointed on a part-time basis at a retainer of \$200.00 a month to act as a press relations officer, up to one year, be approved and the Public Relations Committee allowed a total budget of \$3,000.00 for the year 1959-60."

Another motion presented to the meeting, "THAT the Manitoba Medical Association employ a full-time professional Public Relations Officer," was defeated, as it was not considered feasible at the present time.

The report of the Committee was adopted.

Columbus Plan

A matter of somewhat controversial nature, the subject of the Columbus Plan invoked considerable discussion. An outline of the Plan appeared in the April, 1959, issue of the Review, it is a method of eliminating fee splitting.

The Special Committee reported that the institution of the Columbus Plan in Manitoba is practical, ethical and legal.

The decision of the meeting was "THAT the report of the Special Committee to Study the Columbus Plan be received and referred back to the Executive Committee for further study," with the recommendation, "THAT the Executive Committee be asked to study any and all means of eradicating dichotomy."

Southern District Medical Society

A meeting of the Southern District Medical Society was held at the Altona Hospital on Thursday afternoon, October 29th, 1959.

Present were: Drs. F. G. Allison, President, M.M.A., Winnipeg; Dr. M. Cohen, Winnipeg; Dr. M. T. Macfarland, Executive Director, M.M.A., Winnipeg; Dr. W. E. Artes, Dominion City; Dr. J. P. Boreskie, Gretna; Dr. V. Dick, Steinbach; Dr. H. U. Penner, Winkler; Dr. M. S. Shalom, Niverville; Dr. J. M. Stiglmayr, Emerson; Dr. S. S. Toni, Altona; Dr. C. W. Wiebe, Winkler.

Dr. Morley Cohen spoke at the scientific session on "Heart Surgery" and Dr. Gerard Allison spoke on "Some Common Cardiac Conditions." These papers were well received.

There was a discussion period regarding hospital standards and Drs. Allison and Cohen explained the method in which Tissue Committees operate in Winnipeg, and the possible expansion of such committees to rural areas.

During the business session Dr. E. K. Cunningham, Carman, was elected President of the Society; Dr. W. H. C. North, Carman, Secretary; and the Representative to the M.M.A. Executive Committee is Dr. H. U. Penner, Winkler.

Following the business of the day, a delicious dinner was served in the hospital dining room under the auspices of the Ladies' Auxiliary.

Northern District Medical Society

A meeting of the Northern District Medical Society was held in the General Hospital and Health Unit Building, Dauphin, on Saturday, Nov. 21st, 1959.

Due to the delayed arrival of the guest speakers from Winnipeg, ward rounds and the presentation of clinical cases were not carried out.

Present were: Dr. J. L. Honig of Swan River, President; Dr. M. Potoski of Dauphin, Secretary-Treasurer; Dr. O. Hierz of Benito; Drs. M. K. Brandt, R. E. Dicks, T. K. Kolkind, J. E. A. Pater-son, L. J. Stephen, B. E. Symych of Dauphin; Dr. J. W. G. Korwan of Roblin; Drs. J. D. Adamson, F. G. Allison, A. D. J. DePape, J. C. Graham, M. T. Macfarland of Winnipeg and Dr. A. H. Bartley of Winnipegosis.

Dr. F. G. Allison, President brought greetings from the Manitoba Medical Association and discussed the fee schedule and tissue committees.

Dr. J. C. Graham presented a paper on "Chest Injuries." Dr. A. D. J. DePape gave a paper illustrated by slides on the problem of Infections in Paediatrics.

Dr. J. D. Adamson, Consultant to Manitoba Hospital Services Plan presented some statistics on the first year of operation of the Plan.

Dr. M. T. Macfarland, Executive Director, discussed various phases of Association activities.

At the business session the following officers were elected for the ensuing year: President: Dr. J. L. Honig, Swan River; Secretary-Treasurer: Dr. M. Potoski, Dauphin; Representative to Manitoba Medical Association Executive: Dr. M. Potoski, Dauphin.

One of the shortest meetings of recent times ended when the guest speakers rushed away to enplane for Winnipeg.

M. T. Macfarland, M.D.

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RAPID
relief of
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asthma

PENTOBARBITAL
Sedation of the Central
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EPHEDRINE
Stimulation of the Sympa-
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	Capsules		Suppositories	
	Adult	Pediatric	Adult	Pediatric
Sodium Pentobarbital	16 mg.	4 mg.	20 mg.	5 mg.
Ephedrine Sulphate	24 mg.	8 mg.	30 mg.	10 mg.
Theophylline Ethylenediamine	100 mg.	24 mg.	120 mg.	30 mg.
Levo-hyoscyamine	0.25 mg.	0.06 mg.	0.33 mg.	0.08 mg.
Potassium Iodide	300 mg.	80 mg.	400 mg.	100 mg.

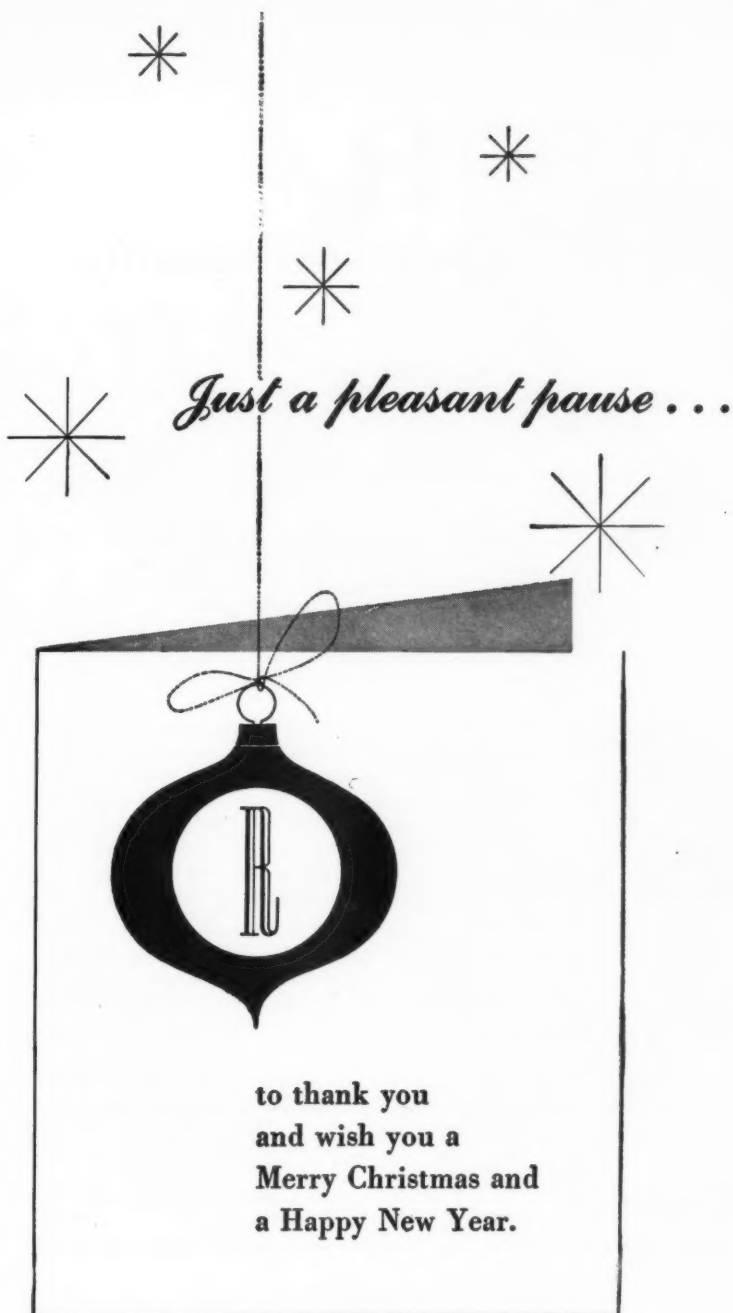
Indications: Chronic bronchial asthma (in adults) and bronchial asthma and croup (in children).

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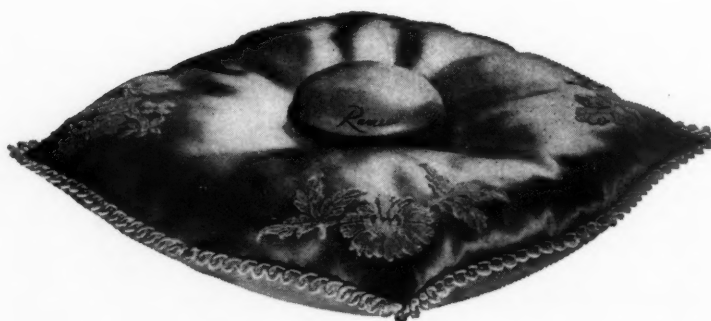
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With RAMSES Diaphragm and Jelly you are also providing essential inner security, since your patient is assured she can plan her family according to her wishes, using not only the most reliable method — diaphragm and jelly — but the most comfortable and reliable diaphragm and jelly, RAMSES. As Tietze¹ points out, the diaphragm-jelly method reduces the likelihood of conception by at least 98 per cent.

After fitting the diaphragm, prescribe the complete unit — new RAMSES "TUK-A-WAY"* Kit #701 with diaphragm, introducer and jelly in an attractive new zipper case.

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1. Tietze, C.: Proceedings, Third International Conference Planned Parenthood, 1953.

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Each fluid ounce contains:

Pinus strobus.....	32 gr. (2.1 G.)
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Sanguinaria canadensis....	4 gr. (0.25 G.)
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Chloroformum.....	1 min. (0.06 cc)
Codeinae phosphas.....	1 gr. (60 mg.)
Flavoured syrup base.....	q.s.

N Telephone narcotic prescription permitted.

DOSAGE: One or two teaspoonfuls every four hours
Packaged in 16 fluid ounce bottles.

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MONTREAL CANADA



The Medical Library

New Bibliographic Tool

The National Library of Medicine in Washington has announced that, beginning with the number for January, 1960, it will publish monthly issues only of a new medical index to be called Index Medicus. The arrangement of references in the new series will be by subject and author, in separate sections in each number, and each number will contain entirely new material.

The American Medical Association has undertaken to publish the annual cumulations of the Index Medicus, and that publication will carry the title Cumulated Index Medicus.

The literature of medicine has been well served by bibliographic devices, such as indices and catalogues, ever since Dr. John Shaw Billings began the original Index Medicus in 1879. For some time the Index constituted the most valuable tool in the reference field, until the American Medical Association started, in 1916, the Quarterly Cumulative Index as a guide to medical periodical literature. It seemed inevitable that the two publications should eventually merge, and this they did in 1927, under the joint sponsorship of the National Library of Medicine and the American Medical Association. The title was changed to the Quarterly Cumulative Index Medicus, thus incorporating both former names.

Unfortunately, due to the fantastic growth of literature, particularly in periodical and serial form, the Quarterly Cumulative Index Medicus began to fall behind schedule, while, at the same time, the need for current indexing increased proportionately. With the present decision of the National Library of Medicine to publish the new Index Medicus, the Quarterly Cumulative Index Medicus in its old form will cease publication with volume 60, covering the period from July to December, 1956. This leaves the years 1957, 1958, and 1959, served only by the Current List of Medical Literature.

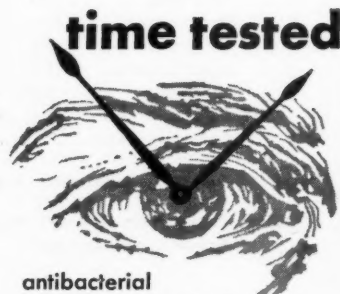
The Current List of Medical Literature is published monthly by the National Library of Medicine, in three parts: the Register of Articles, the Subject Index, and the Author Index. It is cumulated semi-annually, in June and December. Periodicals for indexing are selected from among the 5,000 titles currently received in the National Library, and include domestic and foreign publications. Subject matter covers all phases of medicine, and selections from the related scientific disciplines.

The Register of Articles is arranged alphabetically by title, and each entry contains the authors, title and pagination of the article. Foreign titles appear in the original language followed by an English

translation. The alphabetical Subject Index provides three levels of subject breakdown, these being a main heading, a subheading, and a "modification." The modification is designed to indicate the specific substance of the article. Each entry contains a number which relates it to a Register entry. Author entries are by surname and initials, and are also related to a Register entry by number.

Doctors familiar with the Quarterly Cumulative Index Medicus will perhaps regret losing its additional services, which included lists of new medical books, medical biographies and obituaries, none of which are found in the Current List of Medical Literature. They may also find in the latter the method of arrangement slower and more difficult to use. However, the main objective of the Current List is currency, and this characteristic, so well achieved, will undoubtedly be appreciated by those who have occasion to rely upon this reference tool to cover the gap between the death of the Quarterly Cumulative Index Medicus and the birth of the Cumulative Index Medicus.

Cynthia Roblin,
Medical Librarian



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preparation for topical
treatment of eye infection

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DEPARTMENT OF HEALTH & PUBLIC WELFARE
COMMUNICABLE DISEASE PICTURE

**North of 53
District**

Three cases of paralytic polio and one case of aseptic meningitis due to polio. Dysentery, some bacillary as well as unspecified have been reported.

Northern District

A paralytic polio case from Skownan area has been reported. Bacillary dysentery and infectious hepatitis are the most numerous diseases reported.

Northwestern District

Infectious hepatitis, whooping cough and tuberculosis are in the majority of cases reported.

Brandon District

Scarlet fever and infectious hepatitis head the list. A case of encephalitis has been reported, also two cases of food poisoning.

Central District

One case of typhoid fever reported from Portage City. Dysentery, infectious hepatitis and whooping cough also listed from this district.

DEATHS FROM COMMUNICABLE DISEASES

October, 1959

URBAN: Cancer, 75; Diarrhoea & Enteritis, 9; Encephalitis (infectious), 1; Influenza, 3; Pneumonia Lobar (490), 4; Pneumonias (other forms), 26; Tuberculosis, 2. Other deaths under 1 year, 12. Other deaths over 1 year, 254. Stillbirths, 12. Total, 398.

RURAL: Cancer, 25; Diarrhoea & Enteritis, 7; Influenza, 2; Pneumonias (other forms), 5; Septicaemia & Pyaemia, 1. Other deaths under 1 year, 10. Other deaths over 1 year, 166. Stillbirths, 8. Total, 224.

INDIANS: Diarrhoea & Enteritis, 2; Meningitis (meningococcal), 1; Syphilis, 1; Whooping cough, 1. Other deaths under 1 year, 2. Total 7.

Winnipeg District

A typhoid fever case and a carrier reported from this city. Six cases of brucellosis are being investigated. Dysentery, infectious hepatitis and whooping cough along with several aseptic meningitis cases.

Southern District

Meningitis due to ECHO virus reported, as well as scarlet fever and infectious hepatitis.

Detailmen's Directory

Representing Review Advertisers in this issue, whose names are not listed under a business address.

Abbott Laboratories

G. J. Bowen	GR 5-4559
R. G. (Bud) Harman	LE 3-7509
Alan (Al) M. Grant	AL 6-0125
Bruce Hunter	GL 2-5263

Arlington-Funk Laboratories, division U.S. Vitamin Corp. of Canada, Ltd.

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Bencard, C. L.

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R. P. Roberts	AL 3-4032

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Fred Gallinger	ED 4-1367

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H. V. Walker	LE 3-8664
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Searle & Co., G. D.

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Will, Charles R.

A. C. Payne	VE 2-2055
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Winthrop Laboratories

R. M. Kelly	Res. GR 5-6038
A. E. Pauwels	CE 3-2024

Wyeth & Brother, John

A. W. Cumming	HU 9-5694
Stuart Holmes	JU 9-4273

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